

MOOCs and Open Learning at Ulster University

Open@Ulster

Research, Consultation
and Recommendations
on an Institutional Approach

Ulster MOOCS and Open Learning Working group
Final Report - May 2015

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The pace of change is quickening every day. New technologies are transforming how we think, work, play and relate to each other. The problem is that many of our established ways of doing things in business, in government and in education, are rooted in the old ways of thinking.

Professor Sir Ken Robinson¹

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¹ Ken Robinson, *Out of Our Minds, Learning to be Creative*, Capstone, 2011.

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FOREWORD

“The pace of change is quickening every day. New technologies are transforming how we think, work, play and relate to each other. The problem is that many of our established ways of doing things in business, in government and in education, are rooted in the old ways of thinking.”

Professor Sir Ken Robinson

Open learning - the core theme of this report - is built on a system that barely existed at the turn of the century: the internet. The internet is already the most powerful and pervasive communication system yet devised. Unsurprisingly, global industries have proliferated on the back of its ubiquitous connectivity. Today, the dominant global corporations are in communications, information, entertainment, science and technology. These have displaced the traditional manufacturing industries that were the staple of mass employment since the industrial revolution.

We have witnessed this shift in Northern Ireland in our regional industrial rebalance to value-adding endeavours: from aircraft to aerospace, from cigarettes to computer generated imagery, from farming to agri-foods, from flax to films, from ship-building to stratified medicine, from textiles to tourism. Set in this context, our graduates are no longer competing with their regional peers but their global peers and our role in shaping their futures is all the more relevant.

The higher education sector is not immune to digital forces. The new digital world that we all work in requires that we shape our graduates to be not only academically qualified but imaginative thinkers that are also creatively adept in digital.

As a university we must equip our students to be employable in today's interconnected world and to be capable co-creators of the future. As a university we must rise to their expectation of a modern, responsive and technologically smart learning and teaching environment, devising flexible means and pedagogies of teaching and learning. In this context, open learning is simply one aspect of a much larger digital learning movement in higher education; one that will increasingly be a modern enabler of the Learning and Teaching Strategy of the University of Ulster.

In our research too, we must harness the potential of the internet. Most of our research is publically funded. So using the internet in a massive, open and thematic way that promotes public engagement and demonstrates our institutional contribution to research and society is a worthy ambition for altruistic and reputational reasons.

Grounded in our institutional vision of Shaping Futures, this report calls for an open vision. The vision is one that remains true to the core higher education path of knowledge generation, education and dissemination: to research is to discover; to educate is to share discovery; to share openly is to shape futures.

The opening quote and reference to 'old ways of thinking' does not detract from our original ambitions; it simply recognises the new world and its digital opportunities. What we commend most about this report is that Open@Ulster recognises the power of our students and our staff together at the heart of learning, teaching and research; it celebrates co-creation of knowledge, and it opens a technological window to creative potential in the collaborative development of open educational resources.

Professor Denise McAlister
Pro Vice Chancellor Learning,
Teaching and Student Experience



Professor Hugh McKenna
Pro Vice Chancellor Research
and Innovation



A Journey from MOOCs to Open Learning: *a note from the authors.*

These are times of massive change in the digital landscape. Global connectivity through the internet added to the power of communication technologies and the affordability of modern devices makes knowledge more accessible and education more and more distributed. It is in this context that MOOCs – Massive Open Online Courses – have been making the digital headlines in higher education recently. And it would be fair to say that a University-sponsored group on Open Learning may not have materialised were it not for the MOOC phenomenon.

The membership of the Ulster MOOCs and Open Learning Working Group drew in expertise across learning and teaching, research and innovation, internationalisation and digital learning; all common aspects of a MOOC. On the principle that we could not ignore the changes taking place, we reviewed the MOOC landscape extensively: what, for example, students expected; what others in higher education were doing and had invested heavily in; and what lay behind the power of the platform.

We started from a conundrum: we saw Ulster as having a proud and long-standing position of strength in depth behind the walls of our digital learning environment, yet some of the new players in MOOCs and Open Learning had moved into this space openly and rapidly. As we researched and reviewed, we increasingly found tensions in the higher education positions on MOOCs. This was reflected locally too in terms of delivery, resources, priority, issues of exclusivity and the additional pressure on lecturers and others for design, production and delivery in this arena. We recognise these tensions in this report. We also recognise the challenge of discerning a business model that works for Ulster, be it on reputation, finance, values, or a combination of these and others.

All paths led us back to the principles of Open Learning re-forged by the white heat of technology and its potential to transform the dissemination of knowledge and distribution of education whilst also remaining true to our institutional values. We concluded that:

- Openness at Ulster should be as much practical as philosophical; widening access, for example, is a dominant gene in our institutional DNA.
- Openness at Ulster must resonate within our business equation; the tensions of resource must be set in the context of the value of what we want to do, the cost of getting there, and a recognition of where we are coming from.
- Openness at Ulster should draw from our niche educational provision relative to others in the sector.

- Openness at Ulster should draw from our niche and high quality research and enterprise; much of our research is publically funded with funders increasingly requiring open dissemination and public engagement with research that is accessible, substantial and demonstrable.
- Ramping up to massive open courses would be a massive step too far today; we need firstly to underpin a change in culture and capability that moves to openness in an assured manner. A measured approach would be to develop a conventional, for-credit online module and then scale for open access.
- MOOC costs are prohibitive unless in partnership; partners could be drawn from higher education, the commercial, professional body or third sectors; on a global scale there may be synergy with the aspirations of IGOs and NGOs with a remit in education, health, young people, poverty and peace - UNICEF, UNESCO for example.
- We must demonstrate capacity and capability by building our external profile in open learning and dissemination in an assured manner – using Jorum and iTunes U, for example.
- We should realise the potential for innovation through the research-teaching nexus; using open learning to enhance the student experience and to inject valuable co-creation and collaboration with our students in curriculum and research outputs.
- We need a policy statement on open learning with aims and objectives to frame an institutional position and calibrate diverse impacts.
- And we must underpin all our efforts with on-going awareness raising, academic discussion, support and targeted projects.

In the end, our journey traced the sequence in the name of our Working Group: from MOOCs to Open Learning. Ironically, the impact of MOOCs on our University can be celebrated already: MOOCs were the genesis of this study and may yet be one the many academic fruits collectively visioned by this Working Group and endorsed by this University.

Professor Brandon Hamber
Director of INCORE

Mr Andrew Jaffrey
Head of the Office For Digital Learning

Dr Brian Murphy
Director of Access, Digital and Distributed Learning

PART A – OPEN@ULSTER

1.0 INTRODUCTION

1.1 MOOCs and OERs: Higher Education’s Digital Moment?

Massive Open Online Courses (MOOCs) and Open Educational Resources (OERs) are distinct aspects of the Open Learning movement currently gaining purchase in the higher education sector. The future potential and immediate opportunities represented in these movements have led some in the sector to coin the current era as ‘Higher Education’s digital moment’.

With over 400 universities, more than 2,500 courses, up to 18 million learners, and over 3,000 instructors channelled through four dominant platforms, the MOOC is undoubtedly becoming of the digital age. MOOCs have their genesis in the open education movement which itself started to find traction at the start of the new millennium. The provenance and emergence of the MOOC is illustrated in the timeline below. The seminal MOOC moment can be seen as the last three years. It was by 2012 that the four big platforms – Coursera, edX, Udacity and FutureLearn - emerged prominently. In terms of maturity these ventures are still in their infancy; however, in the digital world, development timelines can be rapid and the consequences revolutionary. This has prompted many in the sector to take note and reflect on the potential of digital for the future of Higher Education if not for MOOCs alone.

Universities UK, in their report of 2013, ‘Massive Open Online Courses: higher education’s digital moment?’

advises the sector to evaluate long-term strategies and poses a number of key considerations.³

1.2 MOOCs and OERs: Ulster’s Digital Future?

At the time of establishing the Ulster MOOCs and Open Learning (UMOL) Working Group, the OER movement was already well established, marked by respected curated sites: a public sector example being Jorum - the UK’s largest repository for discovering and sharing OERs⁴; and a proprietary site being iTunes U.

However, it was the rapid development and debate surrounding MOOCs that generated the initial impetus for the University to take stock and task the Working Group to answer the question: is open learning part of Ulster’s digital future?

With MOOCs offering chances for millions to follow low-cost (to the learner), high quality, open (mainly in terms of pre-requisite and fee for registration) courses led by distinguished scholars, the University was interested in exploring opportunities that fall into categories such as:

- enhancing institutional reputation through new global dissemination vehicles
- widening educational outreach and participation through openness
- development opportunities for online transnational education and short courses
- enhancing the research-teaching nexus in mainstream educational provision.

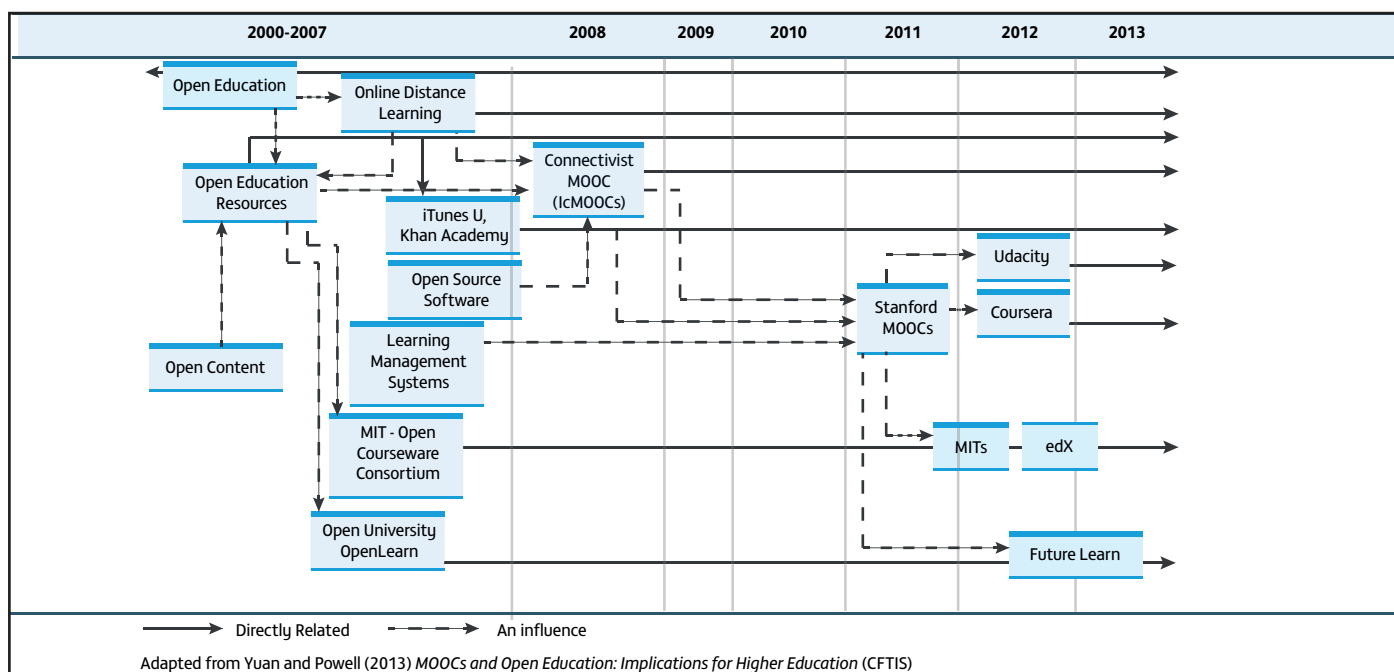


Figure 1 The Maturing of the MOOC²

2 The Maturing of the MOOC: Literature Review of Massive Open Online Courses and other forms of Online Distance Learning, Department for Business Innovation and Skills, HMG, UK 2013

3 Universities UK. Massive open online courses: Higher education’s digital moment? Universities UK, 2013

4 JORUM: <http://www.jorum.ac.uk/> [Accessed April 2015]

A key question to be addressed was: given the 'massive' extent that was evidently now possible and taking account of the development and set-up costs for high quality production and delivery, could the free provision be rolled out in a way that is financially sustainable, or are less obvious business models at play?

Deeper questions of digital learning were also implicit in the Working Group's direction to explore MOOCs and open learning. As a result, the Ulster MOOCs and Open Learning Working Group was constituted as a working group of the Digital Learning Sub Committee (a sub-committee of the Learning and Teaching Committee). The key question in this connection - given the development of a high level Digital Learning Strategy during 2015 – was, what would be the likely impact of a seismic shift towards online models of delivery on the traditional ways of doing things at Ulster? This being a shift that had already disrupted business and operations models in many other sectors, most notably: retail, banking, publishing, travel and entertainment? ⁴

2.0 DEFINITIONS and DESCRIPTIONS

2.1 Massive Open Online Courses

According to Universities UK, MOOCs are free, open-access, scalable and online higher education courses.

Massive cohorts access MOOCs within a common 'live' window of delivery. Typically, a variety of online educational resources (commonly video) are combined with instructional materials and online methods of synchronous and asynchronous communication (such as message boards and chat). To cope with the high student volumes, the support strategy is one of encouraging peer-learning networks in place of more conventional synchronous learning and academic instruction.

MOOCs are commonly a product of a contractual agreement between higher education institutions and third party online platforms.

2.2 Open Educational Resources

According to the Hewlett Foundation, Open Educational Resources (OERs) are:

'teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property licence that permits their free use and re-purposing by others. OERs include full courses, course materials, modules,

textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge'. ⁵

3.0 METHODOLOGY

The Ulster MOOC and Open Learning Working Group was established early 2014 to consider the potential for Massive Open Online Courses (MOOCs) and other forms of open learning as articulated in the above context of the sections above. The membership was assembled from across faculties and central departments with a focus on expertise on learning and teaching, research, internationalisation, pedagogy and learning technology. (Appendix 1 - Terms of Reference and Membership).

Minutes from the working group are available online. ⁶
Collated literature resources are available online. ⁷
A keynote MOOC bibliography, mainly of UK origin, is provided in Appendix 2.

The Working Group was convened five times between January 2014 and November 2014 to review findings and reported these to the Digital Learning Sub Committee (DLSC). A concluding presentation on the public dissemination of publicly funded research (Appendix 3) was made to the Research and Innovation Committee on 4th March 2015. The timeline showing the various consultations on behalf of the Working Group and the evolution of the concept of Open@Ulster is provided in Figure 2.

A review of MOOC platforms is provided in Appendix 4.

The investigative activities can be broadly categorised as below.

- **Preparation**
 - Literature Review
 - Sector scan
 - Institutional benchmarking
- **Platform Analysis**
 - Review of sample MOOCs
 - Exploration of MOOC platforms
 - Barriers to entry analysis
 - MOOC aggregators
 - EU Open learning collaborations
 - iTunes U investigations
 - JORUM pilot project

5 <http://www.hewlett.org/programs/education/open-educational-resources> [Accessed April 2015]

6 <http://addl.ulster.ac.uk/committees> [Accessed April 2015]

7 <http://wiki.ulster.ac.uk/display/AC/Reference+Material> [Accessed April 2015]

8 <http://addl.ulster.ac.uk/news/view/professor-neil-morris> [Accessed April 2015]

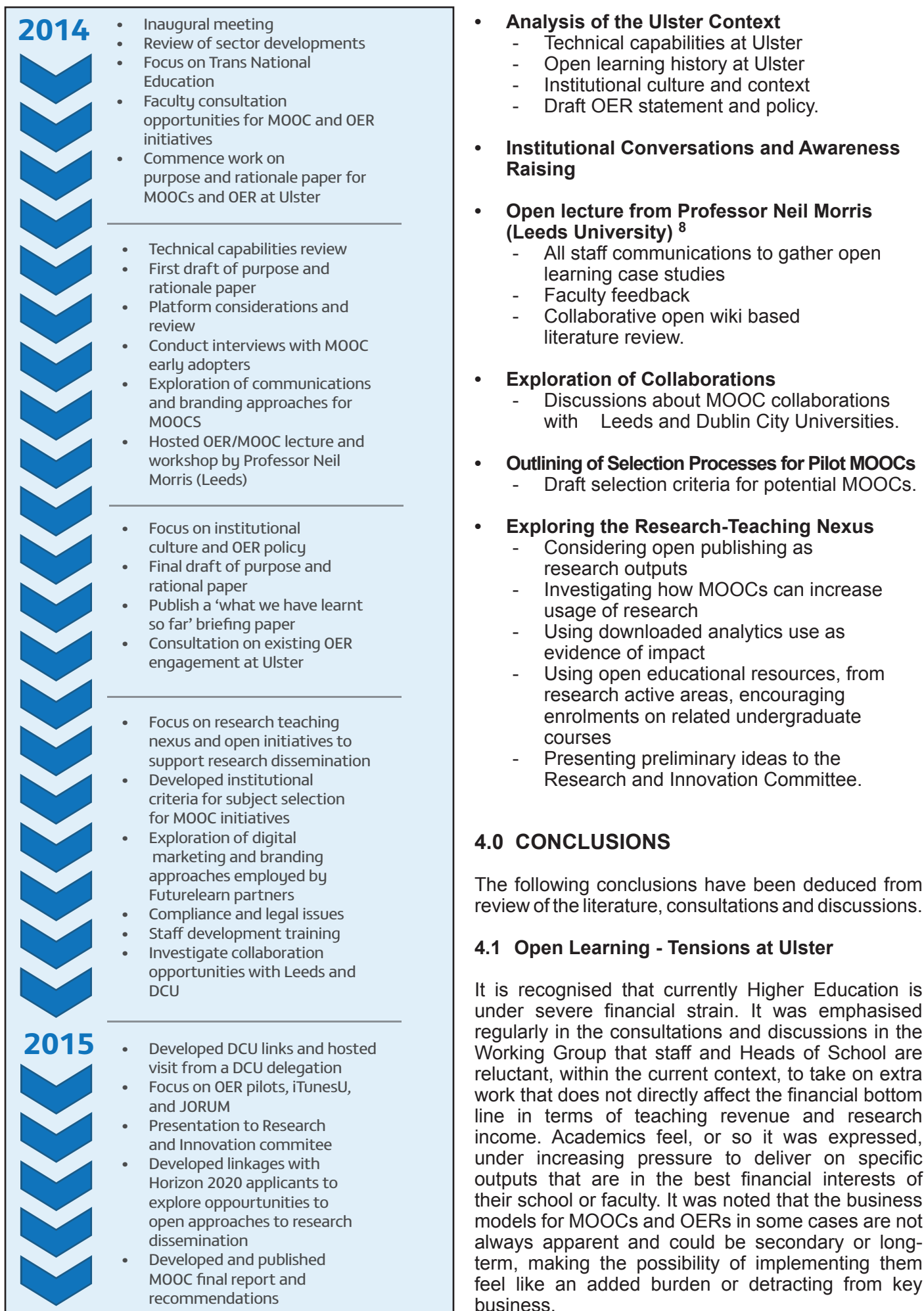


Figure 2 Evolution of concept of Open@Ulster

At the same time, it is clear that education is changing globally. The internet has revolutionised access to high quality digital educational resources, often for free. This has had three main consequences.

Firstly, education resources are now more accessible than ever, reaching across the globe often to those who previously had no or limited access to education. Although there is a debate as to whether such resources will challenge mainstream Higher Education in the long run or not, it has created a global context for Higher Education that is changing. These changes simply cannot be ignored in terms of how to recruit, run, offer and market education products - but also Higher Education institutions are increasingly being measured (at least by part of the public) in terms of what they give back to society in terms of accessibility. This demands a wider vision for education that extends beyond the classroom and financial self-sufficiency of institutions themselves.

Secondly, this has resulted in growing expectations among students that high quality digital resources will be part of their learning experience, and that these are accessible and free.

Finally, larger Higher Education institutions that have more resources have moved significantly into open learning and MOOCs - although the direct financial benefits are not always forthcoming (and such institutions can weather these) - it is clear that they recognise the importance of free digital resources to their reputations in terms of access, their world-leading expertise and their brand.

4.2 MOOCs at Ulster?

Although the burning issue pervading all consultation regarding MOOCs was the search for the business model, a number of other challenges were also raised. In summary, these are distilled next and treated in sequence.

- i. Is the 'open' of the MOOC truly open?
- ii. Can the 'massive' of the MOOC be achieved by a single university?
- iii. What is the MOOC business model for this University?

In respect of 'openness', those who have delivered OERs were supportive of the concept of MOOC development as a natural progression of existing practices. However, the concept of openness was identified as a philosophical issue. The research of the Working Group found that the 'open' in MOOCs leant more on the side of being free of cost and pre-requisite qualification at the point of registration and less so in the sense of accessibility or widening access. While there was support for the wider principles of openness and some subject areas saw opportunity, these tended to be in widening access, participation and transnational education. In all cases the prime motivation appeared to be outreach, bridging and conversion to taught provision in the main.

The lack of unanimous support for the principle of MOOCs may be attributable to two factors: first, the conflict within the MOOC debate internationally being mirrored institutionally; and secondly, the fact that large-scale, light-touch courses will naturally find niches where they are most useful, leaving significant areas where they are less so; this being in common with the Working Group's research into edX MOOCs (section 8.1 MOOC Synopsis - Learning or Lurking?).

The question of the scale and practicality of 'massiveness' tended to sit across debate on openness, usefulness and economic worthiness. The evidence of massive engagement with MOOCs is irrefutable in the findings of the Working Group. While the scale of certification is less impressive, vast engagement and exploration are evident (section 8.1 MOOC Synopsis) suggesting that there is a diverse and untapped learning demand and a tacit aspiration to badge or qualify. Nevertheless, the general mood of the Working Group was that, as is the case with most MOOC development, that a partnership would cushion risk and aid agility.

The Working Group heard the strongest of expressions of opportunity in the potential for MOOCs to raise research profiles and particularly demonstrating research. In this debate openness, massiveness, economic worthiness and institutional niche converged naturally. As a result, the findings were presented to the Research and Innovation Committee (Appendix 3 – Public Engagement and Research Dissemination). Examples of massive dissemination opportunity was of particular interest, as was the concept of demonstrable public engagement with publicly funded research. The illustrations in the presentation showed how diverse subjects from humanities and classics to the history of war and cancer had been able to reach their target audiences by theme, stratification (e.g. public, practitioner, researcher), or partnership (e.g. Marks and Spencer facing the business community).

Finding the 'thematic converter' was found to be key to massive research dissemination, be it website, OER or MOOC. The evident example here was of the Open University in REF 2014 having successfully cited over 40 million downloads of research-driven resources through iTunes U, YouTube and Facebook (see section 4.3 also).

In the final analysis and taking into account the checklist of considerations advised Universities UK (section 8.1 MOOC Synopsis – First Steps), it was concluded that the ramp-up from scratch to an institutional MOOC would be a step too far without first nurturing an institutional vision and a creative culture on openness (see section 4.3 also).

Further, from the resourcing perspective it was considered that the cost and risk would be prohibitive, unless shared with an educational or business partner. This was explored with both the University of Leeds and Dublin City University; both being institutions

with which Ulster has an educational relationship. Although the discussion progressed significantly with both, in neither case was a conclusive way forward found at this time. What was progressed from this engagement with Leeds was the appointment of Neil Morris (Professor of Educational Technology and Director of the Office of Digital Learning at the University of Leeds) as Visiting Professor of Digital Learning at Ulster.

The issue of platform was found to be key to MOOC visibility. This was explored with Dublin City University. In this regard a key finding was that the high profile platforms are closed to most new providers, with resilience built around the exclusivity of the consortia; the key UK platform in this respect being FutureLearn. Ironically, this excludes many institutions who have a mature history of online distance learning. It was felt, nevertheless, that both Ulster and Dublin City University would continue to jointly explore MOOC potential with a wider consortium of strong e-learning providers on an alternative.

That said, the groundwork to support a future decision to develop a MOOC has been established and many of the team and resource implications (Appendix 5) and thinking behind this are captured in this report for that eventuality, including consulted criteria for selection of a MOOC and its team (Appendix 6).

A corollary of the present decision not to seek an immediate MOOC development is that an alternative form of open dissemination within the OER spectrum is recommended. (See section 4.3 and Recommendations of section 5.0).

4.3 Open Learning - Next Steps at Ulster

Overall, it was felt that the open-learning agenda was now sufficiently mature within HE and the wider education sector that open learning should have a presence in the institution's developing Digital Learning Strategy.

Further, it was concluded that there is significant value in developing open learning at Ulster with respect to:

- enhancing the student experience
- leveraging the research-teaching nexus
- engaging student as co-creators of knowledge and educational resources
- furthering pedagogic research
- public dissemination of research

In these respects it was felt that open learning was an integral part of a range of mainstream teaching and research that could be valued, adopted or resourced as appropriate to particular circumstances.

It was found that there were a number of examples of open learning already at the University. Commonly themes found were:

- publishing presentations on Slideshare
- publishing lecture material on Youtube
- publishing podcasts on iTunes U
- publishing lecture material on jorum.ac.uk
- developing OER courses, in partnership with students
- publishing open data sources as research outputs

It was clear from the initial survey through working group member that although many academic staff were active in open education, this had been down largely to individual initiative and, on occasion, to ad hoc development across courses. In conclusion, whilst there was evidence of pockets of open learning activity, this had not been part of an institutional drive or policy recognising the change nature of academic practice from a transmission pedagogies to distributed learning pedagogies as illustrated below. With regard to MOOCs, the tension reflected above was inherent in the institutional focus on fee-paying Master's level courses providing non-regulated fee revenue.

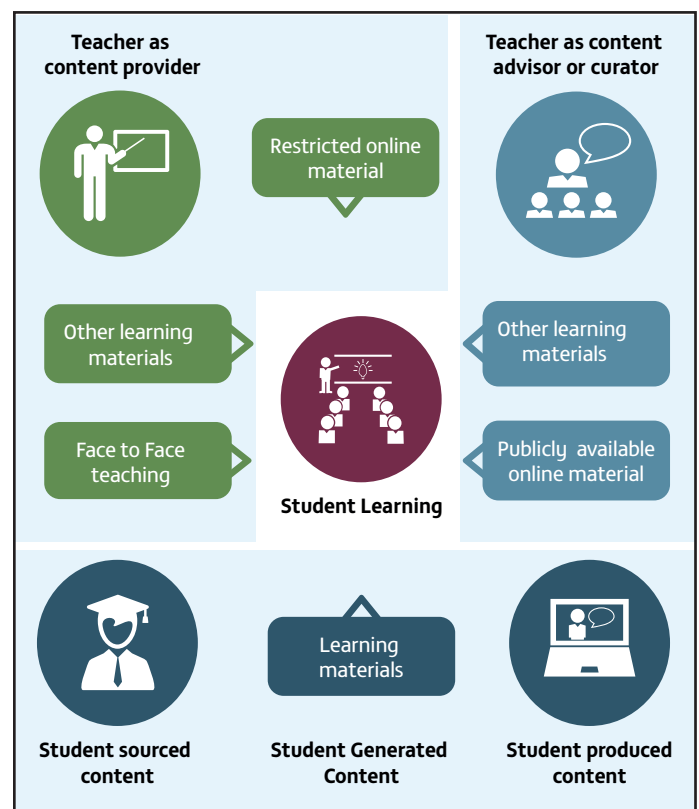


Figure 3 Changing Nature of Academic Practice ⁹

⁹ Adapted from N Morris, <http://www.slideshare.net/NeilMorris2/presentations>
CC:BY 2.0, <http://creativecommons.org/licenses/by/2.0/>

Whilst this report stops short of recommending immediate MOOC development, it is concluded that a policy and initiatives supporting open learning, OER development, and the showcasing of Ulster OER sites would be appropriate and that these activities would fit nicely as new digital aspects of teaching, learning and research dissemination. This could however ultimately lead to MOOC development.

In recommending this institutional approach to OERs, the Working Group advises that the checklist of MOOC considerations advised by Universities UK has merit for consideration in the context of open online developments (section 8.1 MOOC Synopsis – First Steps). Further, finding the ‘thematic converter’ would form a key aspect of institutional site development. This was shown in the research to be important in triggering interest and achieving outreach or engagement.

5.0 RECOMMENDATIONS

The following recommendations are derived from the conclusions above and have been consulted upon by the working group.

- i. Develop an ‘Open Learning’ vision statement with aims and objectives (Section 6.0).
- ii. Develop an OER policy to build capacity and capability (Section 7.0).
- iii. Integrate ‘Open Learning’ into the emerging Digital Learning Strategy.
- iv. Constitute an ‘Open Project Board’ reporting to Digital Learning Sub Committee (DLSC) to oversee institutional OER projects arising through the recommendations.
- v. Prepare for an institutional iTunes U and/or Jorum OER presence (Appendix 7), ensuring interdepartmental collaboration in the development of high quality showcase sites.
- vi. Use open-learning drivers to enhance the research-teaching nexus, for example:
 - Open learning resources (and potentially MOOCs) as tools for impact in research
 - Sponsor MOOC-like production of research topics for final-year undergraduate and postgraduate taught provision or more widely for professional development.
- vii. Continue to raise awareness of open-learning and MOOC developments.
- viii. Continue to enhance the skills through training and sharing of information of existing staff in the areas of open learning and MOOCs.

- ix. Continue to explore the feasibility of business models (including models that not only focus on direct revenue but marketing and secondary benefits) for open-learning resources and, potentially, MOOCs at Ulster.
- x. Continue to explore and build collaborative partnerships in the open-learning and MOOC areas with potential academic and enterprise partners.

These recommendations prepare the institutional ground for open learning as part of the Digital Learning Strategy and as capacity, capability and credential building for any future MOOC development

6.0 OPEN@ULSTER - Definition, Vision, Aim and Objectives

	Open Learning Recommendation	Action	Owner	Date (by/ from)
i	Open at Ulster Vision	Draft, consult and publish	Working Group	by Apr 2015
ii	OER Policy	Draft, consult and publish	Working Group	by Apr 2015
iii	Open@Ulster	DL Strategy output	Director ADDL	by Sep 2015
iv	Open@Ulster Project Board	Open projects call	Office for Digital Learning	fr June 2015
v	iTunes U and Jorum	Open projects call	Office for Digital Learning	fr June 2015
vi	Research Teaching Nexus	Open projects call	Office for Digital Learning	fr June 2015

Table 1 Open learning recommendation and timeline for implementation

OPEN@ULSTER - VISION

Definition

According to the Hewlett Foundation, Open Educational Resources (OERs) are: ‘teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property licence that permits their free use and re-purposing by others. OERs include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge’.

<http://www.hewlett.org/programs/education/open-educational-resources>

University Mission

Education and research at Ulster University is set in a context of the institution’s contribution to the economic, social and cultural development of Northern Ireland and its global standing.

‘Shaping Futures’ captures the University’s mission intent of excellent accessible teaching and learning, and focused research excellence and innovation.

Open Vision

To research is to discover; to educate is to share discovery; to share openly is to shape futures.

Open Aim

To enable open publication and exchange of high quality research collections and educational materials that enrich the teaching, learning and research experience at the University of Ulster and to enhance impact nationally and internationally through open sharing.

Open Objective 1

(from vision: to research is to discover)

- 1.1 To enable open dissemination of collections of the highest quality materials produced in collaboration with the research institutes and other aspects of niche and high impact research at Ulster.
- 1.2 To facilitate and measure outreach and public engagement with publicly funded research.
- 1.3 To repurpose research materials as rich interactive teaching resources.
- 1.4 To enable staff and students as collaborators in the co-creation of knowledge.

Open Objective 2

(from vision: to educate is to share)

- 2.1 To enable open showcasing of collections of the highest quality learning materials within each faculty.
- 2.2 To facilitate and measure educational outreach regionally and nationally.
- 2.3 To enable more flexible and accessible provision of education both on- and off-campus.
- 2.4 To enrich and expand the repertoire of educational resources available to mainstream taught provision
- 2.5 To enable staff and students as co-creators of educational resources.
- 2.6 To contribute to and measure enhancement of the student experience in taught provision

Open Objective 3

(from vision: to share openly is to shape futures)

- 3.1 To enable and measure the discovery of high quality, high impact and open online publications and OERs of the University in a manner that ensures that our reputation is enhanced, our opportunities are optimised, and our contribution to individual, society and the economy is widely disseminated.
- 3.2 Through the open agenda at Ulster, enhance the graduate qualities of our students and their prospects in employability, further study and future careers.

7.0 OPEN@ULSTER - OER Policy Statement and Guidance

This policy document has been compiled by the Ulster MOOC and Open Learning Working Group. It outlines a recommendation for a policy to encourage the creation, use and publishing of OER materials. The policy is based on Leeds University's Open Educational Resources policy which is released under a Creative Commons Attribution Non-Commercial ShareAlike licence which permits others to share and adapt under certain conditions.

OPEN@ULSTER – OER Policy Background

Ulster University is committed to providing students with a high quality, challenging and rewarding learning experience that equips them with the knowledge, skills and confidence necessary to demonstrate critical intellectual inquiry, to progress in their career, to adapt to change, and to become responsible global citizens who make meaningful contributions to their profession and their communities.

The strategic intent of Ulster's learning and teaching strategy is to enhance the student experience through the provision of well-designed, flexible, inclusive, relevant and accessible programmes and curricula that promote student engagement and success.

Academic staff use a variety of teaching materials to support their teaching including teaching notes, hand-outs, audio, images, animations and multi media materials. Some of this material is self-authored, some is shared between colleagues and some is made available to reuse across the institution.

There are many example of school and faculty reuse of learning materials and resources. An established culture of institutional reuse of materials has been fostered through the Technology Facilitated Learning Development Programme and Centre of Higher Education Practice SupportAL.

Some academic staff have engaged with Open Educational Resource (OER) initiatives through JISC and research funded projects. Open Educational Resources are digitised teaching, learning and research that reside in the public domain or have been released by the copyright owner under an intellectual property licence (e.g. Creative Commons) that permits their use or re-purposing (re-use, revision, remixing, redistribution) by others.

OPEN@ULSTER OER Policy Statement and Guidance

OER POLICY STATEMENT

The University encourages staff and students to use, create and publish OERs to enhance the quality of the student experience, providing that resources used are fit-for purpose and relevant. The following policy guidance is based on the guidance developed by the University of Leeds.

OER POLICY GUIDANCE

1. The use, creation and publication of OERs must be consistent with the University's reputation and values.
2. A typical OER will be a granular piece of content or a small collection of relevant assets (e.g. podcast series, animation, or collection of documents).
3. Whether or not OERs are used or published in a School, Department or Service is ultimately a decision for the Head of School, Head of Department or Head of Service as appropriate. Unless stated to the contrary, it is assumed that use, creation and publication of single units or small collections will be allowed. Where use, creation and publication are to be restricted, Schools, Departments and Services are encouraged to identify and communicate a rationale for restriction. It is expected that justifications for restriction will normally be based on protection of commercial interests.
4. That staff undertake a compulsory online training course prior to publishing OERs. The course will cover IPR, copyright and branding.
5. The copyright owner and licensor of any OERs created by Ulster staff should normally be Ulster University.
6. When creating and publishing OERs, the copyright owner(s) must be visibly attributed.
7. That content authors should ensure that published resources are aligned to the University's evolving brand and identity guidelines.
8. The University reserves the right to remove resources that do not comply with its policies and/or request removal of resources from external repositories.

9. It is the responsibility of staff and students to ensure that they have the necessary rights to publish an OER and that all resources published comply with relevant policies (e.g. copyright, IPR, accessibility).
10. Staff and students are encouraged to publish OERs using a creative Commons licence. Attribution-NonCommercial-ShareAlike 4.0 licence¹⁰ is recommended but other licences may be used if necessary or appropriate for their resource.
11. Usually authors wish to formally assert a "moral" right to be properly acknowledged as the author. The University believes this is good practice as it gives proper recognition for work undertaken. The right must be positively asserted. To ensure proper attribution, a good form of wording would be: "The right of [name of author] to be identified as author of this work has been asserted by them in accordance with the Copyright, Designs and Patents Act 1988".
12. The University recommends that digital open educational resources be published through jorum.ac.uk – a JISC funded service for UK further and higher education institutions. If resources are to be published elsewhere, it is good practice to publish an entry in JORUM directing users to the source resources.
13. Staff are encouraged to collect data on OER downloads as evidence that can contribute to academic promotion; reward and recognition. Analytics, where available, should be utilised to measure usage and value.
14. Where staff are encouraging students to create and publish OERs as part of their programme of study, these guidelines should be followed and a suitable review process should be undertaken before publishing.
15. All OER publications must be reported to and recorded by the Digital Learning Sub Committee.

¹⁰ <http://creativecommons.org/licenses/by-nc-sa/4.0/>

PART B – RESEARCH REVIEW

8.0 MOOC FINDINGS

8.1 MOOC Synopsis

Power of Platform - With over 400 universities, more than 2,500 courses, up to 18 million learners, and over 3,000 instructors channelled through four dominant platforms, the MOOC is undoubtedly becoming of the digital age.

This burgeoning of the MOOC has happened in the three years from 2012 to 2015. According to a variety of online sources,¹¹ at least one hundred staff are employed by each major platform provider. The technical roles cover areas such as instructional design, video production, web development, systems development, management and maintenance etc. Many more will be employed indirectly through contracted-out services. In addition, thousands of instructors have been involved. This clearly requires funding at levels beyond the resources of most institutions. Historically, this has been stimulated by a combination of venture capital investment and endowments with a long-term view.

The monetisation of MOOCs is an area of much scrutiny. It is reported, for example, that Coursera raised \$85 million in venture capital and it is estimated that the largest source of revenue is currently certification.¹²

Initially there were three big platform providers: Coursera, Udacity and edX. More recently FutureLearn - a non-commercial UK-anchored platform - has appeared. FutureLearn has rapidly exceeded Udacity in terms of share of total MOOCs (see below – Horses for Courses). With currently of the order of 350,000 learners, 40% of which are of international domicile, FutureLearn is an Open University-owned platform with a core consortium of elite UK university partners and an expanding network of international universities.¹¹ It too is becoming a major player in the global MOOC field.

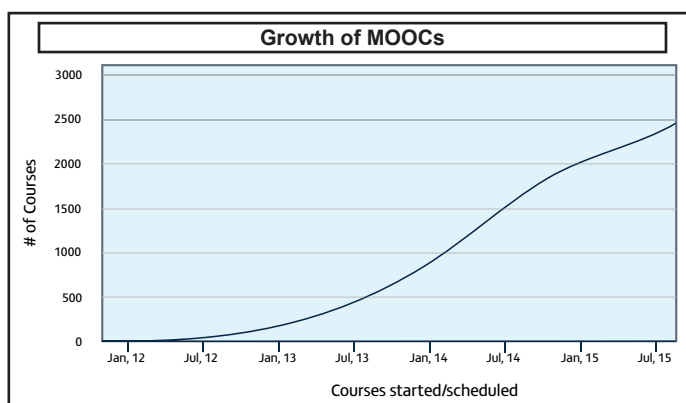


Figure 4 Growth of MOOCs Cumulative number of courses¹³

Coursera is a well-established platform that hosts top universities and organisations worldwide. Initiated by two Stanford professors in 2011. It began delivering in 2012 with four founding partner institutions: Stanton, Princeton, Michigan and Pennsylvania. In less than three years it reached 10 million learners.¹² Today it hosts 12 million from 190 countries across 1,000 courses provided by 117 institutions. This generates up to 500 TB of online traffic per month and is supported by over 4.3 million online documents.¹¹

Recently, premium MOOC products have been introduced. Examples are the 'Signature Track' (2013) and 'Capstone' projects (2014).¹² Signature track is a form of certification that 'credentialises' the learners achievements – a move that will lead to wider premium services such as a careers service or a head-hunting capability. This involves identity verification, verified certification and shareable course records. Capstone projects are a form of premium certification of specialisations in which learners work on real-world problems set by top corporations. In addition to premium certifications, this could provide the opportunity for companies around the world to integrate MOOCs into their training and development programmes.

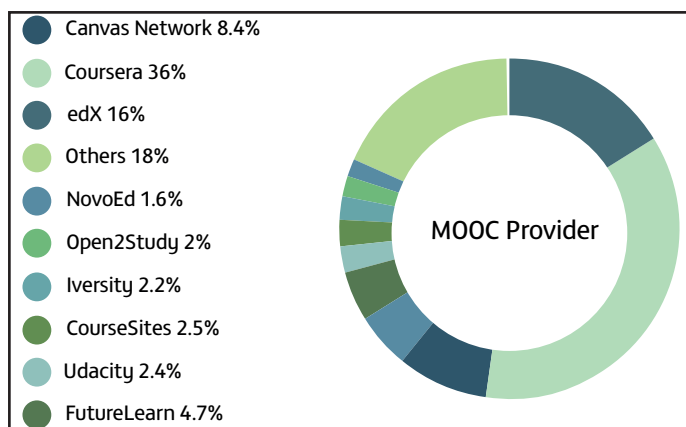
It is purported that some of the global platforms and their founding institutions are already recovering costs through shared revenue. Coursera, for example, realised up to \$12 million in revenue for 2014.¹³ Estimates suggest that platform providers share with universities 6-15% of revenue and 20% of gross profits on courses. While profitability may not yet be the norm, it must be recalled that platforms are only three years into existence with scope for further growth and capitalisation into premium services, personalised products, conversion to fee-paying provision, advertising revenue and selling of data. The latter is the social media business model where access to the individual in the system becomes the product.

Examples of the various MOOC platforms are illustrated below. Although the number of MOOC providers started to slow in 2014, Coursera remains the largest platform despite shrinkage in share from half to a third during 2014.¹¹ This still leaves Coursera with twice the volume of edX, a platform which doubled its share within that year.

¹¹ For example: company, LinkedIn and Wikipedia websites.

¹² <https://www.class-central.com/report/futurelearn-350k-learners/> [Accessed April 2015]

¹³ <https://www.class-central.com/report/moocs-stats-and-trends-2014/> [Accessed April 2015]

Figure 5 Course Distribution by provider¹³

In the UK, the University of London and the University of Edinburgh were early MOOC movers. These institutions still dominate their national sector with hundreds of thousands of international enrolments across a small number of courses.

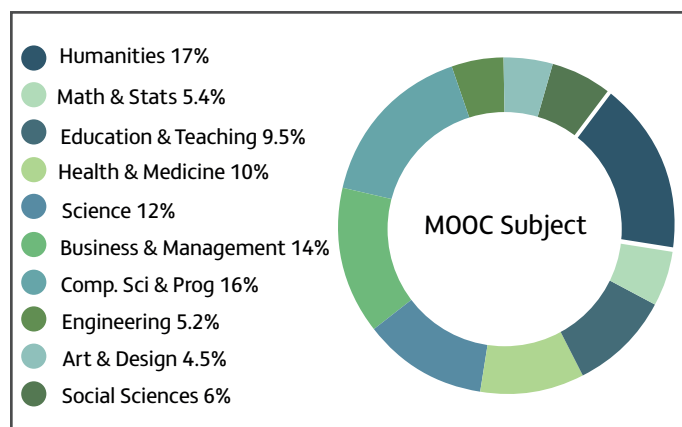
The power of platform is evident also in the recent acquisition by LinkedIn - one of the world's largest professional internet networks with more than 300 million members worldwide - of Lynda.com, an online learning platform and certification agency for business, technology and creative skills. Although not a MOOC development (yet), this evidence of corporate acquisition of platform and certification capacity by a massively networked organisation is a sign of the times.

A summary of other platforms can be found in Appendix 4.

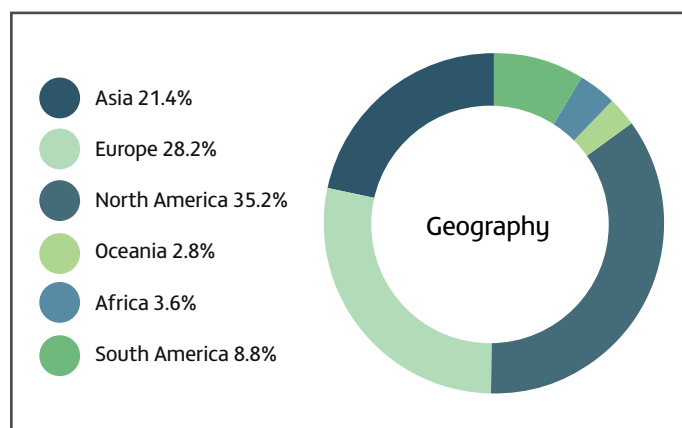
In conclusion, the volumes witnessed in MOOCs - be it learners, online traffic, finances, courses or systems - are truly massive. Further, the scale of massiveness through global reach - unparalleled in the history of higher education - is evidence of the power of the learning platform coupled to the connectivity of the internet. While much has been said about the MOOC threat to higher education, it is clear today that this model will not displace the on-campus, fee-paying model. In the view of the authors, it is more likely that closed and costed MOOC derivatives in partnership with national professional and other global bodies will be a threat to short course, professional development and training markets currently enjoyed by the sector.

The power of the platform is key in this: it will allow a select few to dominate the premium CPD and training sector globally.

Horses for Courses – The distribution of Coursera courses by subject is shown below. Humanities, Computing and Business dominate with between 14% and 17% each of the course offerings. Science, Health and Education are popular and account for around 10% each.

Figure 6 Course Distribution by Subject¹³

By comparison, figures released in 2014 by edX¹⁴, show typical enrolments at 25,000 per course with a breakdown by course of: Computing Science 68,000; Science and Technology 20,000; Humanities 20,000; Government/Health/Social Science 20,000.

Figure 7 Coursera data on location of learners³

By contrast, the certification rates of Computing and Science and Technology were of the order of half that of the other courses. A drop in participation of the order of 40% was noted when courses had repeat runs; however, after the second repeat enrolments stabilised. Interestingly, a plot of course networks demonstrates the centrality of Computing Science courses as hubs not only to other courses in the field but more widely.

Access or Success? – Early learner demographics tells a story of MOOCs for the capable and privileged rather than MOOCs for greater access.

Enrolments are predominantly from the developed world (see diagram on the location of learners). In keeping with this, the vast majority of courses are delivered in English with Spanish being the next most prevalent language.

It would appear, on the basis of this data that while MOOCs may be 'open' to all, they are not attracting or retaining (as evidenced by completions – see later Learning or Lurking) new entrants to higher education

14 HarvardX and MITx: the First Year of Open Online Courses, 2015; and, HarvardX and MITx: the First Two Years of Open Online Courses, 2015 <http://www.ecampusnews.com/top-news/harvard-mit-mooc-392/> [Accessed April 2015]

in massive numbers. In this context, 'open' has greater emphasis on free and without pre-requisite at the point of registration.

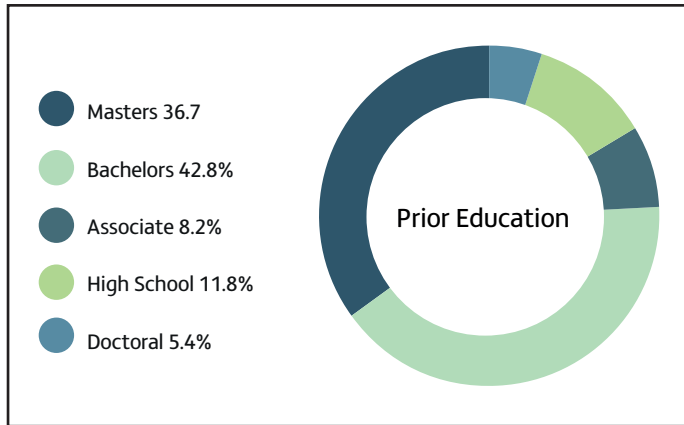


Figure 8 Coursera survey data of prior level of education ³

Of those that do complete courses, most are able to do so because they have the technological skills to take advantage and are mostly doing so as graduate learners (see figure 8) with the educational background to succeed, and are doing so for reasons often of continuing professional development.

It would appear on this evidence that the emphasis of 'open' is weighted more on absence of cost and pre-requisite qualification at the point of registration rather than new entrants to higher education.

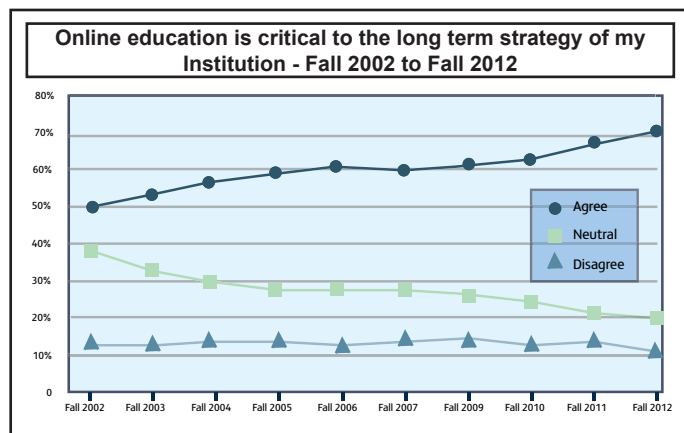


Figure 9 Views of academic leaders on the role of online query based learning ²

Studies on student participation on edX online courses were published in January 2014 and 2015. ¹⁴ These provide substantial data and research on the behaviour of MOOC learners. Published by the HarvardX Research Committee and the Office of Digital Learning at MIT, the authors use their data to counter those who make a case against MOOCs on the basis of the student experience. A few points taken across both studies are elaborated here.

First, almost two fifths (39%) of edX learners are teachers with a fifth declaring themselves as teachers or former teachers in the area of the course. Further, of those that chose certification, over two-thirds are graduates and are typically in their late twenties.

Secondly, in terms of engagement with content, in the first years of operation edX MOOCs had:

- 1,700,000 registered, of which 1,000,000 were unique users (2015 update)
- 300,000 unique participants (2015 update)
- 43,000 earned certificates in the first year, while 36,000 without certification explored more than half the course (2014 report)
- 4,000 or more earned more than one certificate, 2,000 with one certificate from each institution (2014 report)
- 300,000 of those registered in a year never engaged with the content (2014 report).
- Lastly, regarding the demographics, of those registered:
 - 1% are declared as male and over 26; this being the largest single category
 - 70% are declared as male (2015 update)
 - 30% declare themselves as female (2015 update)
 - 69% are degree educated (2015 update)
 - 3% have IP or home addresses from the United Nations list of least developed countries.

The authors of that report make the following key points to counter the charge of less favourable student experiences around completion rates, certification rates and comparisons with traditional degree provision. (Comments have been adapted and/or paraphrased).

Regarding completion rates.

- Profiles of activity ceasing is highest in the first week at around 50%, declining sharply in the second week to 16% of those who persist to that point, and these percentages continue to decline over subsequent weeks.
- In contrast to conventional courses, open online enrolment occurs continuously throughout courses – rising as launch dates approach and declining rapidly after launch dates pass.
- Exploration is most likely near the launch dates but viewing likelihood is stable through the run of the courses.
- While course exploration may benefit from synchronous scheduling of the cohorts, managing asynchronicity is a challenging but fertile area for future research.

The report concludes that:

- MOOC registrants are not “students” in a conventional sense, behaviours differ accordingly.
- Activity varies considerably within and across courses.
- Describing MOOCs as though they are a ‘monolithic’ collection of courses misses the differential usefulness and impact MOOCs may have from sector to sector.
- Given how different some of the courses and sectors are, their commonalities are surprising - certification rates, for example, are similar on average and in their variability.
- Asynchronicity is a defining feature of open online learning, with implications for research.
- Open online courses are neither useless nor the salvation of higher education – for example large-scale, light-touch learning platforms will have sectors and niches where they are very useful and others where they are less so.

Dot.com Learning: unbundling academic services – Conflicting perspectives on MOOCs persist within the academic community. On the one hand, MOOCs appeal to those who espouse open access to education; on the other, the levels of investment involved make them either a form of showcase advertising for reputational reasons, or a prelude to building market opportunity. The examples cited previously (under Power of Platform) of premium certification services and diversification into careers and recruitment services are poignant; the potential for online internships on research and action research projects is also relevant.

There is, however, unease in the academic world that the monetisation model of MOOCs that places platform provider over institution inverts the current business model at best, and disrupts it at worst. An inversion places the institution as the provider of learning services but with the learners residing with the platform provider as the dot.com contractor of pay-as-go services ranging from learning, to literature, certification and peripherals such as conferences, travel, accommodation, technologies etc. The phrase ‘others viewing this product also bought...’ characterises the commercial services approach.

The emergence of mooc.org is a prescient example. During September 2013, this partnership of edX and Google was announced with the intent of expanding an open-source platform for: ‘non-consortium universities, institutions, businesses, governments and teachers to build and host their courses for a

global audience’. This marks a key moment in the evolution of the MOOC: a collaboration between one of the largest internet services providers with one of the dominant MOOC platform providers.

Despite, or perhaps in spite of, the growth of MOOCs, the value of online query-based learning at institutions continues to rise. This is a direct result of the ubiquity of connectivity and access to information over the internet. It will continue to be an increasing aspect of all forms of learning in the future.

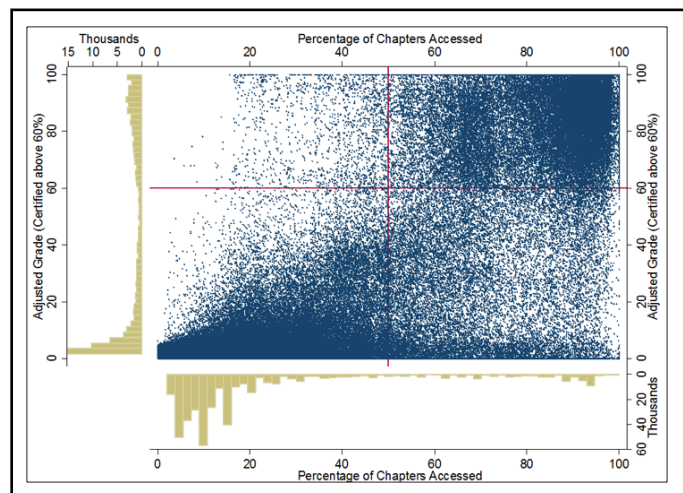


Figure 10 Learner Behaviour in MOOCs (from Harvard and MITX: the First Year of Open Online Courses, 2015¹⁴)

Learning or Lurking? – There has been much negative debate concerning the student experience and levels of learner support within a MOOC. This is predicated on the evidence of the large dropout rates. This rationale, however, visits the traditional quality assurance model of fee-paying higher education onto an open alternative; and one with no formal qualification attached. Non-completion, for example, is the prerogative of a learner in both models but there has been no breach of contract as a result of dissatisfaction, or lack of support services in a free course and one which is clearly experimental in an upfront way to the learners as they enrol.

Clearly, providers have their reputations to consider and would prefer completions to be high on any course, fee-paying or otherwise. In response to this MOOCs are introducing ‘meet ups’ in which learners and sometimes the educators within a commutable international or national location can arrange face-to-face self-help groups.¹⁵ This, however, is at their own expense. It does allow scope for innovation but it will not be an accessible enhancement to all learner circumstances around the globe.

That MOOCs have introduced a new dimension to learning cannot be disputed. As shown in the scatter-point figure 10,¹⁶ course activity can tell a more complete story about opportunities to learn than assessments alone.

15 <http://www.openeducationeuropa.eu/en/news/face-face-meetups-should-be-integral-part-moocs-says-entrepreneurship-professor> [Accessed April 2015]

16 <https://press.linkedin.com/site-resources/news-releases/2015/linkedin-to-acquire-lynda.com> [Accessed April 2015]

The quadrants (clockwise) show some patterns to note.

Quadrant 1 (upper right) represents the grouping of registrants with high completion rates and certification rates; the performance represented in this group is self-evident.

Quadrant 2 (lower right) groups registrants with high completion rates and low certification rates; this is the most homogenous of all groups and represents those that completed but did not opt for certification. This exposes a significant grouping that are less interested in the qualification or are less prepared to pay for it. This massive group of registrants are generally overlooked in analysis and debate around certification rates. Here the MOOC is satisfying and, perhaps generating, a new form of educational demand.

Quadrant 3 (lower left) groups those with low completion rates and certification rates; as with quadrant 1, this is mostly self-fulfilling behaviour.

Quadrant 4 (upper left) is the least populated group; this group consists of those that have low chapter completion rates yet high certification rates. This may represent 'trophy hunters' or, perhaps, learners with a strong background in the area who are short-circuiting to the test.

Overall, however, the vast numbers in all regions of the scatterplot is noteworthy. It is indicative of an immense diversity of learning approaches that registrants take in MOOCs.

range of learner patterns is illustrated in the diagram below. The active participants prove, unsurprisingly, to be the most resilient. The aspirations driving the learner patterns range (chart below) from learning to sampling to being part of a community, etc.

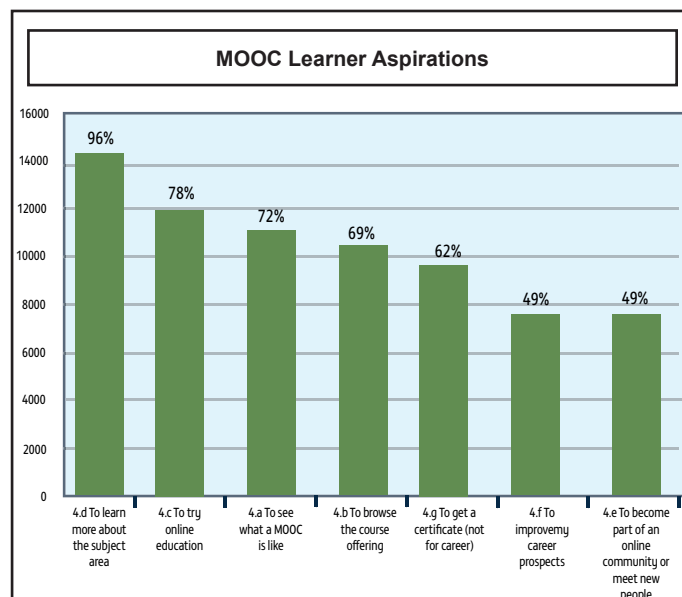


Figure 12 Combined exit survey responses to Q4 'What did you hope to get out of the course and did it meet your expectations?' Calculated as a sum of exceeded expectations, met expectations and fell below expectations responses - with percentage shown of total exit survey respondents ²

First Steps – Universities UK has provided published advice to institutions considering MOOCs. In essence these are to consider the aims and the organisational changes required. ³ The advice is reproduced below.

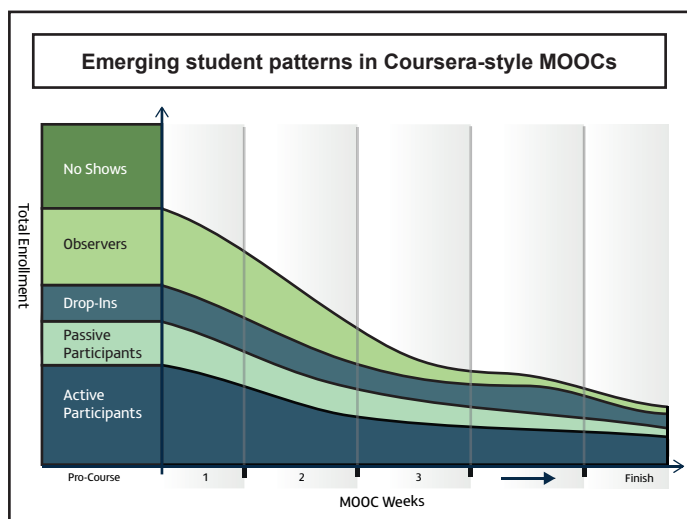


Figure 11 What students do on MOOCs²

The patterns just described are also mirrored in the Coursera data above. ² As has been noted previously, the motivations which guide learners to sign up for MOOCs vary considerably more than for traditional courses. These range from those who wish to learn to: those who wish to observe; those who wish to partake; and those who wish to lurk, listen or watch. These are all permissible in the MOOC world. In other words: many sign up to MOOCs with no intention of completion from the outset. This

Universities UK: MOOC Recommendations

What are the aims of engaging with MOOCs?

- **Mission** – What role can open online courses play in communicating knowledge and expertise, and raising the profile of your institution and its department around the world?
- **Recruitment** – What role can MOOCs play in diversifying recruitment pathways, particularly among students from non-traditional, adult and professional backgrounds and from overseas?
- **Innovations** – What role can open online models of delivery play in improving the quality and value of online and traditional courses for students, employers and society?

What organisational changes do new online models of education require?

- **Sustainability** – What are the costs of developing and running open online courses and what are the wider implications of a shift towards free course content for the sustainability of existing business and pedagogical models?
- **Pedagogy** – How can an institution add value to the educational experience beyond free and low cost models to develop different skills, and to facilitate a variety of social and professional networks?
- **Credit** – What institutional and sector arrangements should be made for recognising certain MOOCs onto paid-for courses and toward a final higher education award?
- **Capacity** – What is the balance between rapid, flexible and wider development of professional and institutional capacity to implement new online models of delivery.

Table 2: Guidance on MOOCs [adapted from Universities UK] ²

8.2 Pros and Cons of MOOCs

In January 2014, the Times Higher Education Supplement published a wry article by the Vice Chancellor of the University of Greenwich¹⁷. The centre-piece of the article was the Gartner hype cycle tool. This is a tool for assessing the impact of emerging technologies and to track the new idea that it supports through key phases from development to adoption. These phases are designated as:

- the peak of inflated expectations
- the trough of disillusionment
- the slope of enlightenment
- the plateau of productivity.

The illustration below captures these phases for the MOOC and positions them alongside the development phases of other technological advances and policy development of higher education that are either recently past and ahead of MOOCs or are emerging from the pipeline.

The trajectory of the MOOC along this Gartner curve reflects the continuous rebalancing over time of the pro's and con's in the collective psyche of higher education. The article claims wryly that in 2013 more was written about MOOCs than was known at the time. The cycle illustrates how, with the passage of time, the evaluation of MOOCs will settle into a more dispassionate view.

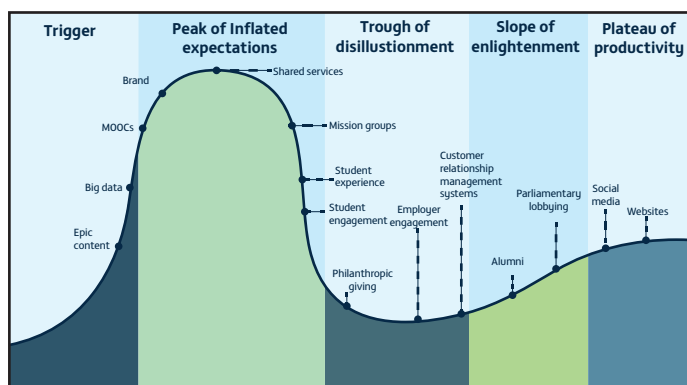


Figure 12 The 'Mooc HypeCycle' adapted from the Times Higher Education Supplement¹⁷

The following table is a composite of the enduring pro's and con's widely recognised by the higher education community across much of the balanced literature on MOOCs at the time of writing.

MOOC Pros	MOOC Cons
<ul style="list-style-type: none"> • no fee requirement for registration • no entry qualification requirement • flexibility • try before you buy • potential to make knowledge accessible and learning available to all • access to experts • global in catchment • synchronous delivery aggregates demand • ubiquity of high quality educational resources • creation of a dynamic teaching archive • driver for improved automated assessment • new educational opportunities • new business models for training • demonstrated massive general demand for knowledge • demonstrated demand for high quality, light-touch learning 	<ul style="list-style-type: none"> • not openly accessible • lacks personal and social aspect to teaching and learning • discussion and collaboration is a challenge due to scale • not accredited (mostly) • learning design is limited • individualised assessment and feedback is impossible due to scale • requires resilience and discipline to stay the course • intellectual property rights are an issue • asynchronous learner patterns exist on a synchronous delivery strategy • requires platform hierarchy above providers

Table 3 Pros and Cons of MOOCs¹⁶

The table above is a composite of the enduring pro's and con's widely recognised by the higher education community across much of the balanced literature on MOOCs at the time of writing.

8.3 MOOC Findings

Below we provide some of the key findings of the Working Group.

Platforms are often not open - FutureLearn (<https://www.futurelearn.com/>) is the dominant MOOC platform within Higher Education in the UK, although some institutions have experimented with Coursera (<https://www.coursera.org/>). There are barriers to entry for partnerships with both these providers. FutureLearn has focused initial growth on Russell Group partnerships and access to the platform is restricted to invitation only. Evidence suggests that a tier 2 membership may be in development which expands membership to dedicated subject areas without diluting the Russell Group brand.

The working group gathered evidence about platforms that encourage collaboration and found that most major platforms are not as open to partnerships as expected. Appendix 4 summarises the various platform providers.

¹⁷ Times Higher Education Supplement <http://www.timeshighereducation.co.uk/comment/opinion/the-hype-cycle-of-moocs-and-other-big-ideas/2010206.article> [Accessed April 2015]

Most UK MOOCs involve Russell Group Universities - FutureLearn identified partnerships with institutions that consistently rank at the top end of league tables, typically Russell Group institutions. This often excludes institutions which have the longest track records of open and digital learning. The Open University initiative was launched in order to 'fight back' against US dominance and provide a space for UK institutions to engage in the MOOC space.

Many early UK MOOCs arose from top-down directives - FutureLearn has grown rapidly due to targeted partnerships with Russell Group institutions in the UK and strategic partnerships with global institutions. As of March 2014, 54 institutions were partners generating over 1 million course enrolments. Anecdotal evidence from those active in the partnerships suggests that signing a partnership agreement with a consortium was the main motivation for developing MOOCs not an organisation strategy or particular history of open and digital learning.

Evidence of successful bottom-up MOOC initiatives is scant - The strategic and democratic approach undertaken at Ulster is common with plans at other institutions outside the consortiums, however evidence of real and meaningful project delivery outside a consortium is scant. The challenge for many institutions outside the consortium is how to meet expectations without the resources of a consortium. The approach taken can be to deliver courses on internal platforms such as Open Source edX¹⁸, Moodle or Blackboard. Other institutions have partnered with EU consortia, MOOC aggregators or commercial platforms such as Blackboard Course sites¹⁹ or Canvas courses²⁰. With the focus on course delivery, rather than marketing, branding and digital marketing, the Massive aspect of MOOCs are often not achieved through these approaches.

Innovation and investment in Teaching and Learning - Many institutions have used MOOC initiatives as a catalyst to reinvigorate existing courses, either blended or fully online. MOOC developments have raised expectations across all online course delivery resulting in improvements to standards, quality and the student experience. Strategies employed on MOOC platforms are often modified and applied in existing blended and distance learning courses. Many institutions align MOOCs to existing distance learning programmes and the investment in infrastructure and content has had positive impact on these courses. They have also served, in some cases, to help raise awareness about a range of courses across institutions.

Selecting strategic projects can be challenging - Practical experience at Leeds and Queens University Belfast has shown that subjects that initially seem attractive for MOOC projects are not necessarily

the most suitable for a successful project. Visiting Professor Neil Morris suggested that the project steering committee at Leeds initially identified research intensive subjects as most suitable for MOOC developments, however, these subjects did not end up as live MOOC courses. The success of a course was largely due to the drive, energy and enthusiasm of individual academic teams rather than subjects which were initially obvious.

Institutional culture and strategies underpin successful delivery - Professor Neil Morris, from Leeds University who spoke at Ulster in February 2014, identified strategic institutional policies on Open Educational Resources, Audio Visual content and Digital Learning as being central to their ability to respond to MOOC opportunities in a considered way. MOOC developments at Leeds were built on top of experimentation with other open platforms, such as iTunes U or JORUM²¹, and overall tended to operate best when they were complemented by institutional policies that supported open learning.

MOOCs are part of an OER continuum - MOOCs have been described as being part of an OER continuum, and many academic and administrative staff have engaged with similar initiatives as part of their blended or distance learning activity. There have been pockets of engagement at Ulster with Open Educational Resources (OERs) over a number of years. Staff who have delivered OERs have described MOOCs as a repackaging or rebranding of existing practices.

In the OER community, openness is closely aligned with legal openness that is assigned through licence types. MOOCs are open in terms of access and cost, but that does not necessarily mean the material is open. Many MOOC platforms enforce legal openness through partnership agreements, and commentators have challenged if they are indeed open. Staff, at Ulster, who have been active within the OER sector have challenged MOOC initiatives on the concept of openness. It is important to understand how both communities interpret openness and to understand the historical context of openness at Ulster.

MOOCs provide rich opportunities through a research-teaching nexus - During the course of the working group's discussions some members started to see opportunities and relevance to the research community, something which was not obvious from initial discussions. Colleagues saw opportunities for raising research profiles and demonstrating research value and impact through MOOC initiatives. MOOCs offered the opportunity to promote research to potentially thousands of users, increase the visibility of research, downloads of specific pieces of research and its impact.

18 <https://open.edx.org> [Accessed April 2015]

19 <https://www.coursesites.com/> [Accessed April 2015]

20 <https://www.canvas.net> [Accessed April 2015]

21 <http://www.jorum.ac.uk> [Accessed April 2015]

Big data, analytics and learner analytics - Many MOOC platforms provide opportunities to harvest rich data sets generated through course administration and online learning during course delivery. Some platforms have been designed with analytics and data as the main motivation. Understanding demographic profiles, geographical patterns and learner behaviour can provide valuable opportunities for institutions agile enough to analyse and act on the data particularly from a marketing perspective. However, anecdotal evidence has suggested that big data promises have not necessarily been delivered when partners have requested data sets and reports from platform providers. It appears that platform providers maintain most of the data rather than institutions, exactly how they are using this is not completely clear.

MOOCs do not currently offer significant direct income generation - MOOC providers, and early adopters, are yet to set out any clear sustainable business models. The models suggested are often unconvincing and some arguably unethical (data harvesting in particular). Some MOOCs claim to be run purely from an altruistic perspective (offering free learning to those who cannot afford it), but this seems likely only for the less established or open-source platform providers. Much of the early activity was focused on raising institutional profile and marketing more generally. But direct income from MOOC initiatives is difficult to quantify. Some institutions have raised some funds by charging small fees (often for a certificate at the level of about \$50) for thousands of signed customers potentially creating some income through scale of return. Other institutions have been able to recruit fee-paying distance learning students who initially engaged with MOOCs, but evidence is difficult to obtain. This is largely due to the lack of intelligence shared between multiple registration systems and from platform providers. (See also 8.1 MOOC Synopsis: Power of Platform).

The value of a strong institutional profile, for both domestic and international recruitment, appears to be a suitably valid approach at many institutions who choose to participate in MOOC initiatives. It is fair to say that conventional business models, when applied to MOOCs, do not stand up to scrutiny.

MOOC partnership with industrial, media and retail sector can raise profile - Many institutions have leveraged their existing partnerships with industry, and the media, to deliver MOOCs. This can offset costs and provide other benefits. Notable examples include Inside Cancer, a Futurelearn MOOC from the University of Bath ²² and Legacies of War ²³, a collaboration between Leeds University and the BBC. Professor Neil Morris from Leeds described on-going projects with Marks and Spencer and the BBC. These partnerships offer obvious branding and marketing opportunities and support the idea of MOOCs raising

institutional profile.

There is evidence that industrial partnerships with US institutions have helped companies recruit new employees from the MOOC student cohort. Industrial sponsors have signed agreements to share personal data related to students who have achieved high scores in competency tests within MOOCs. Other industrial partnerships are focused on raising the profile of particular technologies, products or systems that offer obvious benefits to the sponsoring company.

MOOC experimentation often underestimates the resource required - Evidence from early innovation in the MOOC space has described the significant resource required to properly market, promote, develop, deliver and review MOOC projects. Pressure points consistently point to the demands on audio-visual resources and in particular video production. In addition, the required academic engagement is greater than expected both during the production phase and during project delivery. Practical experience points to gaps in skillsets both in existing teams and within institutions that would have made delivery smoother. Digital marketing, social media and experience managing online communities are skills that are needed to successfully promote and administer a MOOC course. Some institutions, including Leeds, have mitigated risk by delivering small MOOC units typically comprised of two weeks of content.

9.0 MOOCs and OPEN LEARNING at ULSTER

Members of the working group had knowledge of individual engagement with open education and therefore took the decision to survey the academic community through an all staff email. The description, which was subsequently used to describe OERs, was:

‘Open educational resources (OERs) are free and openly licensed educational materials that can be used for teaching, learning, research, and other purposes.’

A number of examples were returned and activity included:

- publishing presentations on Slideshare
- publishing lecture material on Youtube
- publishing podcasts on iTunes U
- publishing lecture material on jorum.ac.uk
- developing OER courses, in partnership with students, on Digital Literacy.
- publishing open data sources as research outputs.

²² <https://www.futurelearn.com/courses/inside-cancer> [Accessed April 2015]

²³ <http://arts.leeds.ac.uk/legaciesofwar/> [Accessed April 2015]

It was clear from the initial feedback that many academic staff are actively involved with open education initiatives however the development of these had been down to individual initiative or developed linked to different courses in an ad-hoc way. Whilst Ulster has a mature culture of digital learning activity, the focus has always been on fee-paying Master's level courses providing non-regulated fee revenue. Open initiatives have not been actively supported or promoted institutionally. Whilst Ulster has a mature culture of digital learning activity, the focus has always been on fee-paying Master's level courses providing non-regulated fee revenue. Open initiatives have not been actively supported or promoted institutionally.

The working group's analysis of successful MOOC initiatives suggested, as mentioned above, that institutions with an embedded culture of openness found that the transition to publically accessible large-scale courses more straightforward. Therefore, the working group felt that this work should be recognised when developing an institutional position on OER engagement.

Given the resource implications with MOOCs, early pilots would have to be selective. As a result an initial set of criteria for MOOC selection were developed based on the state of the sector at the time. (Appendix 6)

10.0 RESOURCING

The working group considered high profile institutional MOOC developments and gathered Faculty feedback on suitable subject areas. A recurring theme was enthusiasm from individuals but reservations about the Faculty resource implications of developing a successful course. Some Faculty contacts identified the need to revitalise existing online courses before dedicating resources to open and free MOOC initiatives. This tension was especially evident in Faculties with a mature distance learning course catalogue.

Institutionally, our research suggests that, Ulster does have suitable technical skills to develop high quality interactive and video content however this resource currently supports core teaching and learning activity with oversubscribed demand on the resource.

Successful implementations at other institutions have been delivered by dedicated project teams with a mix of core staff, temporary staff, freelancers and external media companies. The working group consulted with other institutions and a summary of typical project teams and an example case study is included in Appendix 5.

Whilst the working group began exploring resource from an academic and technical perspective there were a number of roles that were not immediately obvious that were necessary for launching a successful large scale MOOC course. These included:

- Marketing
- Branding
- E-moderation
- Online facilitation
- Course Administration
- Social media engagement
- Video production
- Online pedagogy and curriculum design
- Adequate equipment available in the institution (e.g. video lecture capture).

APPENDIX 1

Ulster MOOCs and Open Learning Working Group

The Working Group was originally constituted under the Educational Partnerships and International Affairs portfolio. Following restructure the Working Group reported the Digital Learning Sub-Committee to the Learning, Teaching and Student Experience portfolio in Summer 2014.

TERMS OF REFERENCE

Purpose: the Working Group will consider the potential for Massive Open Online Courses (MOOCs) and other forms of open online learning.

The approach will be to:

- Appreciate the cultural and philosophical environment
- Identify capacity and capability requirements
- Align developments to strategy and governance frameworks.
- Prioritise and oversee pilot projects
- Review, report and disseminate

This approach will be operationalised through reference to the following terms.

1. Review and disseminate sector developments on MOOCs and other forms of open online learning.
2. Advise on the Ulster context and develop and maintain an institutional position statement together with academic rationale and an opportunity, benefits and risk analysis.
3. Determine the academic governance for MOOCs and open online learning in order to inform: resource implications, options appraisal on technical requirements and enabling technologies.
4. Determine the priority pilot fields and the academic and business rationales for MOOC and open online learning developments at Ulster, such as: Transnational Education (TNE), Access, Learning and Teaching, Knowledge Transfer.
5. Establish objective, impact-informed selection criteria for institutional support partners, resourcing and sustainable development of pilots.
6. Direct the Office for Digital Learning on the academic support and staff development requirements associated with MOOC and open online learning developments at Ulster.
7. Through the Office for Digital Learning manage calls for pilot projects and selection thereof.
8. Establish an editorial board hosted by Office for Digital Learning with institutional authority on editorial, digital and production standards and protocols for MOOC and open online learning development and approval.
9. Disseminate examples of good practice and communications through the Office for Digital Learning and other relevant channels and groupings.
10. Report to the Educational Partnerships and International Affairs Committee through the Digital Learning Projects & Strategy Sub Committee.

In reaching decisions the Group will have due regard to the impact and implications of the current resource environment and for the University's commitment to ensuring equality of opportunity and good relations as outlined in their Equality Schemes, and associated policies. Where possible and practicable the Group will ensure that its actions are proactive in this respect.

COMPOSITION OF THE ULSTER MOOCS AND OPEN LEARNING WORKING GROUP

Professor (Chair for 2014/15)	Professor Brandon Hamber
Pro-Vice-Chancellor (Learning, Teaching and Student Experience)	Professor Denise McAlister
Director of Access, Digital and Distributed Learning	Dr Brian Murphy
Professor of Education	Professor Linda Clarke
Head of Office for Digital Learning	Mr Andy Jaffrey
Office for Digital Learning (Creative Digital Designer)	Mr Philip O'Neill
Office for Digital Learning (Instructional Design Consultant)	Mrs Aine MacNeill
Head of International Business Support	Ms Shauna McKeown
Head of International Student Experience	Mrs Roisin McEvoy
Head of International Student Marketing and Recruitment	Mrs Teresa Purdy
Faculty of Arts	Dr Malachy O'Neill
Faculty of Art, Design and the Built Environment	Mr David Comiskey
Faculty of Computing and Engineering	Dr George Moore
Faculty of Life and Health Sciences	Professor Geoff McMullan
Ulster Business School	Mr Fred Scharf
Faculty of Social Sciences	Mr Kristian Lasslett
Teaching and Learning Committee Representative	Prof Martin McKinney
Director of the Centre for Higher Education Research and Practice	Prof Diane Hazlett
Director of Student Administration and Registry	Mrs Ruth Wasson
Head of Quality Management and Audit Unit	Mrs Janet Alleyne
Information Services Directorate	Dr Kenneth McCartan
Secretariat (Access, Digital and Distributed Learning)	Mrs Sharon Copeland

APPENDIX 2

KEYNOTE MOOC BIBLIOGRAPHY



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Department for Business Innovation and Skills, HMG, UK 2013

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/240193/13-1173-maturing-of-the-mooc.pdf [Accessed April 2015]



HarvardX and MITx: the First Year of Open Online Courses. HarvardX and MITx Office of Digital Learning, January 2014. (Far Left)

HarvardX and MITx: the Two Years of Open Online Courses. HarvardX and MITx Office of Digital Learning, April 2015. (Left)




<http://www.ecampusnews.com/top-news/harvard-mit-mooc-392/> [Accessed April 2015]

APPENDIX 3

PUBLIC ENGAGEMENT and RESEARCH DISSEMINATION

A presentation to the Research and Innovation Committee, March 2015



Ulster MOOC and Open Learning Working Group

Professor Brandon Hamber – Chair
Dr Brian Murphy – Director Access, Digital and Distributed Learning

ulster.ac.uk

R&I Committee:
Rationale for presentation

- End-of-term report on UMOL WG
- Post REF2014 digital opportunities
- Illustrations of Impact and dissemination
- Consideration of :
 - Research strand to Digital Learning Strategy
 - Opportunities for Research-Teaching Nexus
 - Ulster Open Pilot




Ulster MOOC and Open Learning Working Group

22 members (Chair Professor Brandon Hamber)
PVC, Faculty representatives, ISD, Central departments.

Purpose

- Increase the virtual and international 'footfall' of potential students
- Enhance the Ulster contribution to accessible higher education
- Develop Ulster business models around open education
- Contribute a high quality virtual dimension to social learning spaces at Ulster.



Beyond REF2014...R&I Connectivity
Repositories, Collaboration, Dissemination, Impact, Conversion, Reach, Public Involvement, Research-Teaching

“We are currently experiencing the biggest fundamental change the world has seen since the initial development of the Internet as people, processes, data, and things become increasingly connected. We call this the Internet of Everything (IoE), and it is having a profound impact on individuals, businesses, communities, and countries.”

John Chambers, CEO, Cisco Systems



http://www3.weforum.org/docs/WEF_GlobalInformationTechnology_Report_2014.pdf

Ulster MOOCs and Open Learning Working Group

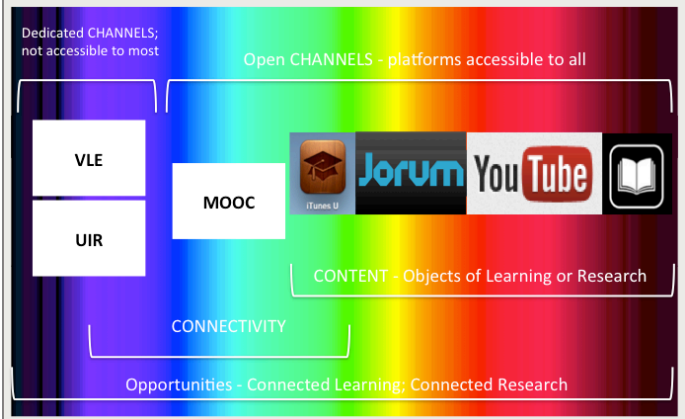
Key Findings:

- MOOCs are not always open
- There must be a business model (what's in it for me?)
- Security of niche (research)
- Lure of a compelling story (expertise)
- Distinctiveness of quality (content, production and delivery)
- Other open platforms (measured approach/cultural change)



- Partnership to share risk.

Spectrum of Content: Audience - Channel - Connection



Adapted from N Morris, <http://www.slideshare.net/NeilMorris2/presentations>
 CC:BY 2.0, <http://creativecommons.org/licenses/by/2.0/>

Channel- Connecting Audience with Content

REF Impact example – Public involvement

“In addition to our broadcasting work, we share our research findings through platforms such as YouTube and Facebook, as well as iTunes U (to date over 40 million downloads of OU content, much of it research-driven).”

REF (2014) Impact template (REF3a)



Channel – connecting audience with content

Inside Cancer: How Genes Influence Cancer Development

Understand how genetics influence the development and spread of cancer, with this free, introductory online course.

WATCH THE TRAILER



Download video: [standard](#) or [HD](#)

ABOUT THE COURSE

Cancer is a disease that affects around one-third of the human population, irrespective of nationality or ethnic origins. There are many types of cancer, but they all have one thing in common - they



FREE online course

Duration: 6 weeks

3 hours pw

Certificates available

SHARE

2 Mar 2015

JUST STARTED

2 Mar 2015

Register Interest

DATE TO BE ANNOUNCED

‘Academics - platform to disseminate research to wider research community.

Practitioners - learn from patients experience and have access to recent research.

Patients - get access to knowledge.’

Dissemination – Opportunities

Enterprise – timely, thematic, public facing

BBC Collaboration with 4 UK institutions on WW1 MOOC

- ‘Changing Faces of Heroism since the First World War’ (Leeds/FutureLearn, 3-week block),
- Aligned to the Legacies of War project at Leeds.
- BBC as content partner enhancing research with audio visual and multi-media packages.
- Academic research in public domain.



<http://arts.leeds.ac.uk/legaciesofwar/>

The screenshot shows the homepage of the 'Legacies of War' website. It features a navigation menu with links for HOME, PROJECT THEMES, ABOUT US, RESOURCES, NEWS, EVENTS, RECENT POSTS, TESTIMONIALS, LINKS, and PARTNERS. The main content area includes a large image of a recruitment poster for the Leeds Pals Recruiting Camp, with text describing the 1915 recruitment drive. Below this, there is a section for 'Recent News' with four articles, each featuring a date (1914-18/2014-18) and a title. The 'Events' section lists two upcoming events: '9th March, 6:00pm - 7:00pm: The Political' and '17th March, 6:00pm - 7:00pm: PRISONERS'. The 'Latest from Twitter' section shows a tweet from @legaciesofwar. The footer includes the Ulster University logo and the website URL.

Innovation – leveraging partnerships; sharing risk
Enterprise - Nothing is free, so where's the product?
 - co-branding and association benefits

M&S-Leeds University

- M&S corporate archive at Leeds University
- Strategic partnership Leeds and M&S
- FutureLearn course titled – ‘The Key to Business Success’

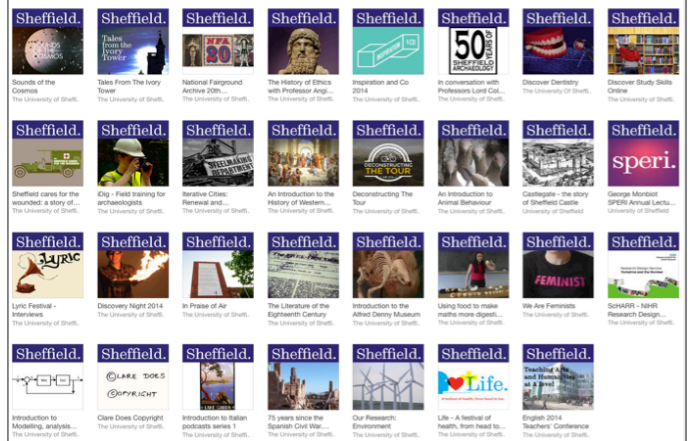
Benefits

- Value of the archive in the wider business, academic and research communities
- Connects theory and practice to demonstrate the importance of innovation in growing and sustaining business
- Growth of business connections and engagements globally
- Conversion opportunities



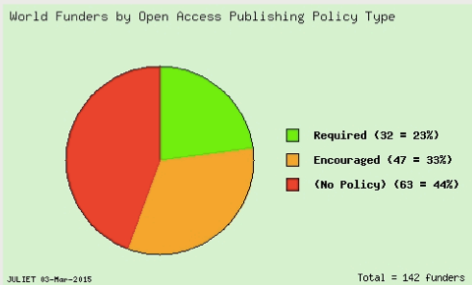
Scaling-Up – Institutional Profile (iTunesU)

iTunesU: global active user base: 6x10⁹



Funding Body Drivers

SHERPA/JULIET - Research funders' open access policies



<http://www.sherpa.ac.uk/juliet/stats.php>



Comments

An Open R&I presence – risks and benefits?

Benefits?

- Institutional, group and individual profile
- Global field for innovative research projects or enterprise
- Opportunities for impact and dissemination
- Public involvement with research
- Business engagement
- Leveraging partnerships and brand
- Conversions to CPD or Short Courses?
- More accessible and flexible research-based teaching on campus?

Challenges?

- Time, effort, resource, shelf-life, support, selection criteria...



Next steps for UMOL WG

- Report April 2015
- Inclusion of Open Vision in Digital Learning Strategy
- Eol for Ulster Open Pilot selection (T: OER, R: iTunesU)
- Reconstitution of UMOL WG as Ulster Open Project Board
- Sustainable resourcing models
- Progress with partners e.g. DCU



APPENDIX 4

MOOC Platform Review

The term MOOC is a term that is subjective. Massive, Open and Online are all terms that are ambiguous and open to challenge.

Ambiguity in definition provides opportunities for existing practices to be repackaged and marketed. This is evidenced in the proliferation of 'MOOC platforms' some of which are new platforms, some are repackaged LMS systems and some of which are aggregators without an infrastructure.

Future Learn is the dominant MOOC platform within UK Higher Education, but some institutions have delivered courses through Coursera.

There are also pockets of experimental course offerings from UK Higher Education institutions with other open initiatives and course aggregators.

Many have no obvious relevance to UK Higher Education institutions.

The selection of platforms below aims to identify those that appear most relevant to UK Higher Educational institutions.

There is a useful list of MOOC providers available online.²⁴

New Platforms

In 2011, several well-financed MOOC providers emerged, associated with top Universities, including Udacity, Coursera and edX. The start up business models of these early platforms supported investment in scalable architecture and the systems are underpinned by infrastructure that supported data collection, learner analytics and research. These platforms are responsive to device, agile and exploratory and provide a simple and unobtrusive interface that challenges conventional VLE products.

Futurelearn - <https://www.futurelearn.com>

- A private company, set up by the Open University, FutureLearn has 29 partners including 3 non-university partners: British Library, the British Museum and the British Council.
- Commentators suggest that FutureLearn's initial growth was targeted at Russell Group institutions but recent partnerships have been with a greater mix of institutions.
- Prior to FutureLearn's launch few UK institutions had run courses, with only two having partnered with Coursera (Edinburgh and University of London). Edinburgh have subsequently partnered with Future Learn.
- FutureLearn's user interface and design is admired for simplicity and mobile and tablet responsiveness.
- The FutureLearn model is to grow the user base for monetisation opportunities in the future.
- In terms of 'safety in numbers', FutureLearn offers the least risk for a UK Higher Education Institution. The platform has credibility and existing links with many UK Institutions.

Coursera - <https://www.coursera.org>

- A for-profit venture that has secured \$85 million of venture capital funding. The platform has generated over \$1 million in revenue from certification processes and is pursuing a business model of payments for premium services. 20% of profits and a small percentage of revenue are shared with partner institutions.
- Commercial contracts, with partners, list ways of generating revenue.
- From a business perspective, Coursera offers most options for generating revenue but their courses have been described as lacking effective pedagogical practice.

24 <http://www.technoduet.com/a-comprehensive-list-of-mooc-massive-open-online-courses-providers/>

- Coursera has partnered with Higher Education institutions in the UK:
<https://www.coursera.org/edinburgh>
<https://www.coursera.org/london>
<https://www.coursera.org/manchester>
- Business focused, Coursera is open to partnership opportunities, which are evidenced, in their extensive list of collaborations including The University of Edinburgh, University of Manchester and University of London. <https://www.coursera.org/about/partners/global>

edX - <https://www.edx.org>

- Founded in May 2012, and supported by investment of \$60 million USD, edX is a not for profit project. The big data collected from the platform is utilised for distance learning research and learner analytics. The Open Source LMS system was released in autumn 2013 and is available to download from <https://github.com/edx/>. The software can be utilised by institutions to deliver similar offerings.
- edX has engaged in a number of partnerships with educational institutions in the United States, China, Mongolia and India.
- The consortium of 32 Universities is listed at <https://www.edx.org/schools>.
- Has partnered with the World Economic Forum to deliver a suite of Professional Leadership courses through the <http://forumacademy.weforum.org/> initiative.
- Google has announced that it will start to contribute to the development of edX and has stopped development of the dedicated Google Course Builder product.
- A partnership with LinkedIn means that edX users will be able to demonstrate certification to potential employers on their professional profile.
- As of March 2014, edX has no UK partners and evidence suggests partnerships are targeted by edX.
- The Google partnership will expand the availability of edX to new partners through <http://mooc.org/>. Non edX consortium institutions can express interest to participate via <http://mooc.org/signup-educational.html>.

Udacity - <https://www.udacity.com>

- A for-profit organisation that grew from a free computer science course at Stanford in 2011. After an injection of venture capital funding in 2013, Udacity has begun to focus on the corporate training market and has announced partnerships with industry leading tech companies including Salesforce and Google.
- The Open Education Alliance, of which Udacity is a founding member, is an alliance of employers and educators committed to empowering individuals to pursue careers in technology. <https://www.udacity.com/open-ed>
- Udacity has no UK Higher Education partnerships and is increasingly focused on the corporate market.

Udemy <http://www.udemy.com/>

- Offers the opportunity to create a course and decide whether it is free or has a fee attached. The platform also allows skinning for corporate training.
- Udemy's model encourages a culture of superstar instructors, some of whom have benefited significantly from the revenue generated through the platform.
- It is debatable whether the model would meet the definition of a MOOC.

Iversity <https://iversity.org>

- A German start-up offering 30 courses, many of which are accredited under the European Credit Transfer and Accumulation System (ECTS)
- Iversity does not focus on elite universities, rather individual teaching teams and the experience of the lead academics.
- Partnership is encouraged and the engagement process appears open and transparent.
- Iversity publically advertises partnerships with a number of European universities; none in the UK.

NovoEd <https://novoed.com>

- Previously Venture Lab, this platform is described as a social online learning environment. NovoEd takes a collaborative approach to MOOCs with an emphasis on group work, peer review and social learning.
- In common with Coursera and Udacity, NovoEd has roots in Stanford.
- The platform could be described as experimental, but does attempt to provide solutions for the pedagogical challenges of massive delivery.
- Novoed encourages partnerships and appears to have an open policy for becoming a partner. <https://novoed.com/partners>.

OER Universitas <http://oeruniversitas.org>

- The newest addition to MOOC platform and the only one explicitly and primarily for widening access and social inclusion globally. An open platform with Creative Commons copyright.
- Origin: New Zealand; there is one UK HEI member: University of South Wales.
- Literature describes OER Universitas as a MOOC rival.
- <http://www.timeshighereducation.co.uk/news/mooc-rival-oeru-puts-accreditation-on-menu/2008571.article>
- Established in November 2011 after two years as a Foundation. The OER Foundation hosts WikiEducator, a flagship community of >65,000 educators. Focuses on sharing knowledge freely. http://wikieducator.org/Main_Page
- Small number of courses; often much shorter than original MOOCs.
- The OERu network includes recognised universities, polytechnics and community colleges from five continents: Asia-Pacific dominates; Canada, Australia and New Zealand in governance.
- The implementation of the OERu is also a formal project of the UNESCO-COL OER Chair network. Institutions maintain a small annual subscription as a Silver, Gold or Platinum member. There is a commitment to develop two courses per year per institution. Its mission is around Widening Access and there is a focus on accreditation that is recognised by all partners.

LMS/VLE Suppliers

- Many existing LMS vendors have responded to the threat from new MOOC platforms with their own platforms and global course lists.

Blackboard

- A repackaging of Blackboard's Coursesites and based on Blackboard's existing LMS.
- A reaction to the MOOC phenomenon.
- Commentators have suggested that there are technical challenges to Blackboard scaling to levels of enrolment that are truly Massive.
- MOOCs on the Blackboard platform: <http://bbbb.blackboard.com/mooc-powered-by-blackboard>.
- Unlike most dedicated MOOC platforms, Blackboard has an historical architecture which may not offer a comparable student experience.
- Some institutions have opted to experiment with MOOC offerings in a familiar environment. However, this approach may not have the same reputational enhancement advantages that partnership with a more high-profile provider such as FutureLearn or Coursera.

Moodle - <http://learn.moodle.net/>

- A lightweight and open-source LMS and a reactor to the MOOC phenomenon.
- The system is an experimental installation running on a cluster of servers which provide scalability and fault tolerance. The interface is skinned with Twitter Bootstrap to provide a more responsive experience across multiple devices, including mobile and tablet.
- In an experimental phase; the platform; would not be an obvious choice for MOOC partnership.

Desire2learn <http://www.desire2learn.com/products/open-courses/>

- A rebranded LMS/VLE as a delivery vehicle for MOOCs with 10 MOOCs in its OpenCourses initiative.
- Another reaction to the MOOC challenge and an unlikely partner.

Canvas <https://www.canvas.net>

- A mix of LMS and course provider, canvas.net is the public face of the course offerings delivered through Instructure's LMS - <http://www.instructure.com/>

A selection of other MOOC platforms.

Khan Academy - <https://www.khanacademy.org/>

- Often quoted as a MOOC provider; the founder of the company does not agree.
- An open, not-for-profit organisation with a mission to provide a free world-class education for anyone anywhere.
- Partnerships are highly selective.
- The Khan Academy is a truly open resource, available to student or teacher.

ALISON

- Relevant to Ulster University through Geography, ALISON (Advance Learning Interactive Systems ONline) is an e-learning provider founded in Galway. ALISON registered its 3 millionth student in February 2014.
- The site is advertising heavy and aims to offer free or low-cost - at the point of delivery - courses that generate revenue through certification and pay-per-click advertising. The interface is cluttered by heavy use of advertising.
- Alison does engage with partners but describes them as publishers.
- Alison has global reach but does not feel like an obvious choice for a potential partner.
- MOOC Aggregators.
- There are a number of websites that aggregate MOOC courses from multiple providers but do not provide a platform for delivery. These aggregators are often detached from the technical infrastructure, although some offer a formal quality label that reviews the delivery mechanism as part of the quality assurance process.

OpenupEd <http://www.openuped.eu>

- A pan-European initiative, supported by the European Commission; 12 partners and an emphasis on open universities. The Open University (UK) is a member and Dublin City University are at the planning stage.
- Courses are delivered in 12 languages, including Arabic.
- OpenupEd has a focus on quality of MOOC delivery but does not provide any infrastructure to deliver the product.

APPENDIX 5

Typical MOOC Teams

The institution sharing the tabulated team resourcing of a MOOC wishes to retain anonymity but is happy details of the resourcing are shared.

5.a FUTURELEARN EXAMPLE ONE

Duration: 7 weeks / 3 hours per week.

Job Title	Time Allocation	Job Role
Academic Lead	3 months 18 hours pw	<ul style="list-style-type: none"> • Provision of the academic content • QA • Course support • Webinar
Instructional Designer	1 FT	<ul style="list-style-type: none"> • Course design • Project management mooc development • Scripts • Build course on platform • Advise/ develop on assessment design • Course support
Learning technologist	1 FT	<ul style="list-style-type: none"> • Develop designs from the ID instructions • Source Images
Video Services	3 Weeks	<ul style="list-style-type: none"> • Record and edit video content
Course Mentors	2 x 3 hours per week for 7 weeks	<ul style="list-style-type: none"> • Supporting learners
Marketing and Communications (involved Marketing and recruitment staff but also core project team)		<ul style="list-style-type: none"> • Liaising with FL team • Liaising with Academics to identify ways to promote course • Social Media presence • Web pages (Front Page and Mooc page) • Press Release • Liaising with Development and Alumni Relations Office to promote to Alumni • Liaise with other key groups

5.b University of Reading

Reading is considered a successful example of delivering MOOC initiatives through the FutureLearn platform and the working group conducted an interview with the Head of Technology Enhanced Learning at Reading who is involved with the projects.

FutureLearn recently hit the 1 million joiners mark – of which 250,000 were signed up on Reading MOOCs. Staff seconded from other parts of the University supported initial work.

In July 2014, MOOC activity (or OOCs as Reading rebranded the activity to encompass MOOCs and Open Learning) was established as 2 year project, and recruited fixed term posts. The team is made up of:

- Director of OOCs – existing academic, working PT, as the lead.
- Project Manager (FT), - we have found developing, running and rerunning a range of MOOCs (we had 5 running at one time recently) requires great co-ordination and liaison.
- OOC Developer FT, who does most of the work in working with academics, taking their content, and redesigning it for FutureLearn.
- Junior Content Developer to support the above.
- In addition, Reading has a budget to with external companies to create videos and animations although there is on going work to develop some basic expertise in this area within the project team.

The OOC project and the staff are located within the Technology Enhanced Learning team. An OOC Steering Group oversees all the projects, and a key role for them is identifying and prioritising what subject areas/Schools to work with, and what MOOCs should be developed.

These decisions are based on a number of factors, including FutureLearn's priorities, Reading's priorities and the readiness/availability of academic staff in a given School/department to work with the OOC Project team.

In terms of success, key points identified are:

- having a strong academic lead – the OOC Director is a real enthusiast and has put a lot of effort and energy into leading this.
- having dedicated staff whose focus is on OOCs.
- rigorous approach to MOOC selection.
- engagement of Schools in developing MOOCs – if the commitment/time isn't there, then better not to pursue it, even if the subject area seems a good choice.
- high quality design of MOOCs – engaging activities, well thought out.

There is debate at Reading, as in the wider sector, concerning the value of MOOCs to an institution.

The OOC project is also trying to gather evidence of impact (e.g. do MOOCs play a role in students choosing to come to Reading?).

5.c University of London

The University of London has been most open in describing the resources required and implement a tiered structure for MOOC projects encompassing:

Project Sponsor

Chief Operating Officer (International Academy). Responsible for initiating the MOOC initiative with Coursera, acted as University representative and signatory for partnership discussions and legal agreements.

Project Director

Director of Academic Development (International Academy). Responsible for defining the scope and structure of the MOOC initiative, overseeing progress, budget sign off, advising on and/or resolving strategic issues, senior Coursera contact.

Project Managers

Lead Project Manager (International Academy). Responsible for MOOC delivery, defining and monitoring MOOC development process, advising on MOOC design, video production coordination, budgeting, copyright clearance, identifying and resolving issues, primary Coursera contact.

Project Managers x2 (International Academy). Both responsible for MOOC oversight, support and issue resolution once the MOOCs had launched. Provided platform and technical guidance to the course teams, student communications and acted as Coursera liaison.

Typical academic team size

These teams include academic staff, instructional design and social media support when the MOOC is live.

- the Camera Never Lies - 7 staff
- Creative Programming for Digital Media & Mobile Apps - 13 staff
- English Common Law: Structure & Principles - 4 staff
- Malicious Software & Underground Economy: Two Sides to Every Story - 2 staff
- Video Production - 2 video engineers

APPENDIX 6

MOOC Selection and Production Criteria

The following criteria are based on those published by the Delft University of Technology, Netherlands, in 2014. TU Delft is a member of the edX consortium.²⁵

Distinctive

- identity of ULSTER is well-expressed in the MOOC
- enhances reputation of Ulster
- area of outstanding reputation
- instructors are recognised experts
- topic is different to other external MOOC provision
- can be an entrance point to mainstream provision or research
- topic has broad appeal
- has a communication plan.

Inspiring

- students experience the MOOC as inspiring and challenging
- evidence of passion from team
- team trained for camera and have good individual on-camera presence
- inspiring delivery
- high quality content in diverse media
- interactive and activate learning
- certificated completion.

Innovative

- implements innovation in learning
- tests an educational innovation
- informs published pedagogic research
- innovation can be implemented in mainstream provision
- state-of-the art production, design and didactics
- has a plan to assess and transfer innovation.

Reliable

- content is correct and reliable
- rigorous academic standards
- based on accredited course, short course or research project
- has support of Head and Dean
- timeframe of development agreed.

Understandable

- content is conveyed as clearly, efficiently and understandably as possible
- applies sound pedagogy and instructional design, with trained e-Tutors
- subject to internal peer review.

²⁵ Criteria for MOOC selection TU Delft https://intranet.tudelft.nl/fileadmin/Files/medewerkersportal/os/Onderwijs/Criteria_for_a_DelftX_MOOC_v2.pdf [Accessed April 2015]

APPENDIX 7

iTunes U and Jorum

iTunesU allows academic institutions to organise and publish open educational resources in a simple way. Many institutions have been active on iTunes U for a number of years and have prominent public web pages which promote the initiatives.

Currently the top 100 courses in iTunes U are dominated by Arkansas, Stanford, Yale, Coppel, Harvard, MIT. Notable exceptions in the UK include the Open University:

<http://www.open.edu/itunes/>

<http://www.ox.ac.uk/itunes-u>

Other examples are:

http://www.leeds.ac.uk/info/30311/learning_at_leeds/1997/itunes_u

<http://www.nottingham.ac.uk/itunesu/index.aspx>

<http://www3.imperial.ac.uk/itunesu>

<http://www.southampton.ac.uk/itunes/>

<http://www2.warwick.ac.uk/itunesu/>

<http://www.herts.ac.uk/university-life/itunes-u>

<http://www.city.ac.uk/itunesu>

<http://www.worcester.ac.uk/discover/itunesu.html>

<http://www.sheffield.ac.uk/itunesu/>

In terms of Universities further down the league tables

<http://itunes.southwales.ac.uk/>

<http://www.stc.ac.uk/content/home/itunes-u>

<http://www.ljmu.ac.uk/ljmutv/itunesu/>

Whilst much of the materials on these iTunes U sites are audio and video based there is opportunity to release structured courses and lesson plans tailored for Apple devices. The best courses incorporate Multi Touch books, news articles, documents, handouts, dynamic apps, videos and websites.

Some members of the working group did express concerns about developing resources for specific Apple devices. The recommended approach will therefore focus on creating and digitising audio and visual material in preparation for aggregating the content in to an iTunes presence. The content can be reused for other channels such as Jorum during the preparation work. A placement student has been secured from September 2015 to support this work.

Launching an iTunes presence would require support from Corporate Communications, International Office and Employability and Marketing to ensure alignment with Ulster's brand and core messages.

Jorum (<http://www.jorum.ac.uk>) is the UK's largest repository for discovering and sharing Open Educational Resources for HE, FE and Skills. Some institutions have a branded landing page on the website examples include:

<http://leeds.jorum.ac.uk> which allows institutions to showcase resources and collections developed by academic teams.

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