

MOOCs: What the research of FutureLearn's UK partners tells us



Foreword

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The Open University has a significant body of research work on online learning open learning, distance education and learning at scale. It also has significant expertise in specific research areas such as computer-based assessment and accessibility stretching back many years (see e.g. McAndrew and Scanlon, 2013). When we consider the impact of our past work on the design of new open online learning experiences, we can review a mixture of lessons based on our past experiences of teaching at a distance and findings from studies in new informal learning contexts that suggest areas for further reflection and new research studies.

We share this developing research agenda with our partners in the FutureLearn Academic Network (FLAN, <http://www.flnetwork.org/>). The FutureLearn MOOC platform has 106 partners, and has created a fascinating context for partners, including universities, specialist institutions and centres of excellence, to consider. FLAN is a network of universities and other partners who come together to share their research into the design, analysis and evaluation of massive open online courses.

Activities include analysis of learning to inform design of courses, design of innovative approaches to informal open learning, different approaches to evaluation of learning effectiveness at scale and the publication of research (Ferguson, Scanlon and Harris, 2016). The network meets regularly (usually quarterly) at different universities rotating location between partners, with presentations, discussion groups and events, and an annual conference day for postgraduate students held at The Open University (OU) in the UK each summer. Open University researchers Ferguson, Coughlan and Herodotou have conducted a review of the research studies emerging from partners that are available in repositories.

A first output, published in spring 2016, was a review of all The Open University's research in the area of MOOCs produced between the launch of the first MOOC in 2008 and February 2016 (available as Ferguson, Coughlan and Herodotou, 2016).

The authors of this second report look at another substantial body of work, publications related to MOOCs that were produced at the 29 UK universities connected to the FutureLearn MOOC platform available in their repositories in September 2016.

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Executive summary

This quality enhancement report recommends priority areas for Open University (OU) activity in relation to massive open online courses (MOOCs). It also identifies research questions that need to be addressed in future. It does this by bringing together all the published research work in this area that has been produced by UK academic partners associated with the FutureLearn MOOC platform from the launch of the first MOOC (Cormier, 2008) until September 2016.

The FutureLearn MOOC platform currently has 106 partners, including 38 specialist organisations (such as the European Space Agency), five centres of excellence (such as the Hans Christian Andersen Centre in Denmark) and 63 universities around the world. The FutureLearn Academic Network (FLAN) provides a research network for these university partners.

FLAN¹ is a network of world-leading universities engaged in research into design, analysis and evaluation of massive open online learning. Activities include analysis of learning to inform design of courses, design of innovative approaches to massive-scale learning, and evaluation of learning effectiveness. The network meets regularly at different universities, with an annual conference day for postgraduate students held at The Open University (OU) each spring.

This report is the second of a set of QE reports that bring together the research work of the FLAN network. The first of these was the May 2016 Quality Enhancement Report 'MOOCs: what the Open University research tells us'. This covered the work of The Open University in this area, and covered 66 publications on MOOCs, authored by 56 Open University authors. The current report extends coverage across the UK and brings together 109 publications by 139 authors from 18 universities.

As the majority of UK universities engaged in MOOC research are also FutureLearn partners and thus part of FLAN, the two reports provide an overview of MOOC research published in the UK before February 2016 (for OU-authored papers) and September 2016 (for papers from other universities). The two reports are intended for everyone who has responsibility for MOOCs or for research in this area,

or who is likely to take on a MOOC-related role in the future.

The current report provides brief summaries of, and links to, all accessible publications stored in the repositories of FutureLearn's UK academic partners that deal with research on MOOCs. Where these publications make recommendations that could be taken up by the OU, those recommendations are highlighted within the report. Full references for all studies are provided in the bibliography.

Studies are divided thematically, and the report contains sections on MOOCs as a field; pedagogy and teaching; accessibility; retention, motivation and engagement; assessment and accreditation; study skills; MOOCs around the world, and sustainability.

This report includes 59 recommendations that have emerged from the publications – each of which is linked to the research study that generated it. Many of these recommendations extend or reinforce what the University is already doing. Overall, the report highlights eight priority areas for University activity.

MOOC priority areas

1. Develop a strategic approach to learning at scale.
2. Develop appropriate pedagogy for learning at scale.
3. Identify and share effective learning designs.
4. Support discussion more effectively.
5. Clarify learner expectations.
6. Develop educator teams.
7. Widen access.
8. Develop new approaches to assessment and accreditation.

These priority areas complement the set of ten priority areas identified in the earlier Open University research report (listed in Appendix 1). Those were broadly similar to those identified here, but showed a clear OU perspective and reflected the OU's extensive experience of online, open and distance

¹ <http://www.flnetwork.org/>

education. The priority areas identified in this report reflect the broader concerns and interests of UK universities in this area.

The following sections bring together the recommendations associated with each of the eight priority areas, showing how they could be used to drive MOOC development and planning.

1. Develop a strategic approach to learning at scale

Develop a strategic approach that encompasses the position of MOOCs both inside and outside the University, both now and in the future. From a University perspective, it is important to keep in mind how MOOCs can be used to enhance the reputation of academics, academic departments and the University as a whole. From a learner perspective, these courses should provide clear introduction for learners new to the subject as well as support for continuing learners who may be working in a related area.

Taking a long-term view, MOOC strategy should influence the development of lasting collaborations and the enablement of impact. More broadly, MOOCs can be linked with sector, national and European institutions engaged in other open education initiatives. Developing these links with other forms of open learning can also be helpful to learners by helping to widen their options. For example, some learners continue to study MOOCs after their end date and these learners might be better served by an open-ended course on a platform such as OpenLearn.

2. Develop appropriate pedagogy for learning at scale

Massive numbers on a course can provide a negative experience for participants, so it is crucial to decide what is educationally valuable about learning at scale and then work with the massive rather than against it. If the development of more social forms of learning is a goal, then MOOC development teams could usefully consider how the diversity, commitment and focused interests of MOOC learners can best be harnessed and used to promote the formation of networks and communities. Teams could also consider the possibilities for the creation of more effective opportunities for self-directed and open-ended learning. Consider how innovative approaches

to learning and teaching can be surfaced and rewarded within the University in order to encourage others to experiment.

3. Identify and share effective learning designs

Design patterns provide a way of showcasing successful learning activities and design innovations, sharing them across faculties and institutions. Take into account MOOC participants' perspectives on what they aim to achieve by joining a MOOC. Although it is important to concentrate on a target learner group, alternative pathways can provide options for other learners.

Providing guidance about ways to apply new knowledge to 'real world' problems could be helpful in deepening and sustaining understanding and promoting creativity. Including and eliciting learners' own ideas and projects would also be a way of developing greater involvement. Games provide a useful way of introducing difficult concepts to learners. Collaboration is important, and work covered in this report provides a strong basis for considering how to support collaboration (Hammond, 2016).

As dropout is a concern with MOOCs, identify measures that can be put in place to reveal what aspects of a course engage learners, and how particular activities engage different types of learner. So that new joiners can catch up with others, make an up-to-date recap of each MOOC available at any time. Aim to minimise distractions that do not support design objectives by organising resources, enabling creative expression in tasks, automating mundane tasks, supporting scale and sustainability, and focusing on learning.

4. Support discussion more effectively

Discussion is important within MOOCs and the FutureLearn platform was designed to support conversational learning. However, this approach must also be incorporated within the learning design of MOOCs and in the approach of educators.

Research in other fields shows that early socialisation experiences have a long-term impact on newcomers' satisfaction, performance, and intention to stay in a group. One way to address this is to pair new arrivals with more experienced MOOC learners, who can help them to understand

the way the MOOC operates. As first-time posters who receive a response in an online community are more likely to post again, raise the priority given to responding to a learner's first post. Subgroups within discussion areas can be used to organise learners and help them identify and comment on content they are interested in. Other approaches that support discussion are to highlight content that contributes to learning by commenting on it, or asking learners to link to videos and photographs and then comment on these to initiate interactions. Be aware that MOOC learners are often nomadic and will move between communities, forming sub-communities within those platforms, so use hashtags to bring those groups together.

Emphasise good online practice beyond MOOCs, modeling 'netiquette' by using inclusive language, demonstrating respect for alternative viewpoints and encouraging different forms of acceptable social interaction. Good practice by learners should be encouraged through specific guidance and exemplary practice.

5. Clarify learner expectations

Within most MOOCs, a significant percentage of learners have never experienced online learning or learning at this level before. Make explicit how to use particular resources, such as videos, or how to structure a debate among peers. Approximate guidance on how long more complex activities require, if deeper learning and integration is to take place, can help guide decisions about which activities to engage in and for how long. Learners are also looking for information about what is expected of them, whether their learning develops incrementally or offers discrete blocks of learning, and how the MOOC is structured. Making this information easily visible, but not dominant, facilitates the learning experience and helps to manage learners' expectations. Enable learners to be more strategic and to make informed choices about how to spend time and invest energy by making it clear how social learning and interactivity contribute to engaged learning, and which independent learning activities are most important if a learner does not have time to complete the entire MOOC.

6. Develop educator teams

Producing and presenting a MOOC involves teamwork across departments. For example,

close collaboration is required between academic teams, producers and academic librarians on issues such as copyright and licensing of resources for MOOCs, support for MOOC design, access to resources and support for digital literacies for educators and learners on MOOCs.

Several studies have shown that educators are often willing to put in extra hours on new MOOCs, with many working to promote a sense of tutor presence and to engage with discussion. However, as these MOOCs become business as usual, it is important to reconsider how time and resources are allocated to their production and presentation. For example, some students have proved willing to pay for additional tutor support, and this could be an option worth exploring.

In the future, more research will be necessary in order to gain a deeper understanding of the educational role of MOOC peer communities and their interactivity if MOOC teams are to make informed decisions about how best to invest time supporting learners. The observatories and dashboards reported by the University of Southampton have the potential to make FutureLearn MOOC data easily accessible to a wide range of educators, supporting them to make informed decisions.

7. Widen access

MOOCs need to reach different sections of the population if the objective of widening access to study in higher education is to be achieved. At a basic level, marketers and those communicating key messages about MOOCs need to consider in greater depth how to attract a more diverse cohort. However, if MOOCs are to provide a route to the full range of higher-level learning, accreditation of learning in ways aligned with university entry requirements will be necessary.

8. Develop new approaches to assessment and accreditation

Within MOOCs, one way of providing feedback and assessment opportunities is through the use of peer feedback. Agreed good practice for peer review would be helpful, and work reported here provides a basis for developing guidelines (O'Toole, 2013). When designing peer review, include a clear option to opt out of submission and review activities, offer differentiated support or peer groups

for students with different ability levels, and provide opportunities to improve peer review skills.

Assessment may lead to accreditation, and badging provides a soft route to doing this. Including badges as part of a MOOC design offers opportunities to reflect upon the assumptions that underpin the pedagogic approach and to reflect on the intended learning outcomes. When aligning badges with learning outcomes, ensure that the learning remains meaningful.

If badges are used, their value needs to be clearly explained and the badge schema should be given a prominent place within the MOOC so that it is accessible to learners at all times and encourages badge collection.

Badge award messages should be pushed out as soon as badges have been awarded, in order to establish a clear link between the award and the associated task. In order to increase and reward engagement, some badges should be available at the start of tasks, to acknowledge engagement up to that point.

In addition to soft accreditation, expand the options of what can be validated, making it possible for learners to work towards full qualifications. MOOCs offering accreditation should take into account the needs of learners and should consider how accreditation impacts on pedagogy. Make stakeholders, and particularly learners, aware of the options for validation and accreditation, relating this to why recognition is sought. Improve measures to link learning gained through MOOCs and other open educational resources, such as OpenLearn, with generic systems for non-formal and informal learning and consider ways of supporting credit transfer.

Introduction

This report provides an overview of MOOC research by FutureLearn academic partners in the UK. It covers work in institutional repositories across the country and focuses on implications for practice. The research is brought together under themed headings, studies in the area are referenced and summarised, and any recommendations that are relevant to practice in the university are highlighted.

In order to write this report, the authors performed a search on university repositories in September 2016, looking for items in the repository that included 'MOOC' in their title or abstract. Some repositories provided a more general search option and, again, the search term was MOOC. The criteria for inclusion in these repositories vary and occasionally the work stored within them is of uneven quality. In general, though, they contain peer-reviewed research published by university staff, together with other high-quality research outputs from the university that meet the Frascati² definition of research.

Some of the research located in this way was set aside. This was because (a) the search had returned words similar to MOOC, such as 'moon', (b) the MOOC combination of letters was not used to refer to massive open online courses, (c) the work simply made passing reference to MOOCs, (d) the paper appeared in the earlier report in this series on MOOC research or (e) the research named in the repository was not accessible and no detailed abstract was available. If a detailed abstract was available, this was used to produce a summary, and this is noted in the text by the term 'Abstract only'. Table 1 (below) shows how many publications were originally found in the repositories, and how many were suitable for inclusion in the report.

The search will have missed research not lodged in institutional repositories and work not located by use of the search term 'MOOC' within those repositories. Papers from universities with a strong institutional policy on repository use, and an effective repository search system were therefore more likely to be included than others. In order to keep this report to a manageable size, work by FutureLearn academic partners outside the UK is not included here.

Each report author took a quarter of the publications identified in this way and produced a short summary, including any recommendations relevant to the OU. These summaries were gathered together and grouped in terms of their main subject. Where publications report on closely related studies and the original summaries and recommendations were very similar, just one publication is summarised here and the related publications are referenced below it.

The May 2016 Quality Enhancement Report 'MOOCs: What the Open University research tells us' showed that a great deal of MOOC-related research was being carried out in many parts of the university, with 56 authors responsible for 66 publications. Since then, another 31 publications on the subject have been added to the OU repository, so research interest remains high.

The summaries provided in this report show how MOOC research is distributed across the UK. Each identifies the university repository where the publication was listed. The majority of FutureLearn partners have published some work on MOOCs, but three universities – Southampton, Warwick and Reading – stand out because they have groups of researchers who are very active in this field. This means that, although 18 universities (excluding the OU) have work included in this report, some researchers clearly have a very strong influence on research in the area. Six authors, two from Reading, two from Warwick and two from Southampton, are each named on more than 10% of the publications in this report and together those six authors had some involvement in 51 of the 109 publications.

While there are clearly centres of MOOC expertise in the UK, each university brings its own perspective to research in this area. This is particularly reflected in work on MOOCs in different subject areas. This work introduces MOOCs to a range of professions and specialists who would not normally be concerned with educational research.

Globally, there is a tendency in MOOC research to imply that all platforms are the same, that all MOOCs are similar and that a study of a limited number of courses (usually on Coursera) is readily generalizable. The label 'massive open online course' sets out some common features: size, philosophy, mode of delivery and structure. However, it does not specify the pedagogy – the

² http://oro.open.ac.uk/help/helpfaq.html#What_is_the_Frascati_definition

theory of learning and teaching – to be used, nor does it specify the types of learning design that work well with this model (Ferguson et al., 2015).

These elements introduce crucial differences between platforms and between MOOCs on the same platform. The research reported here takes these differences into account and shows that there is a strong awareness in the UK of differences between MOOCs and MOOC platforms.

The summaries below each identify the MOOC platform associated with the research. In 41 cases, no platform was specified, usually because the work was general in its scope. One paper (Liyanagunawardena & Williams, 2014) covered 30 MOOC platforms, 26 papers covered FutureLearn, 13 dealt with Coursera MOOCs, five included MOOCs based on a connectivist pedagogy (also known as cMOOCs) and others covered a variety of platforms.

Overall, the work included in this report shows that FLAN has a strong research basis on which to build. While some universities are just beginning their work in this area, most have at least begun to review the field and to study their own MOOCs. The first postgraduate students in this area are completing their theses and moving to roles as early-career researchers who add their experience to active research teams. Some strong research provides a platform for others to build on, while the overall spread of work adds breadth to the field. Various sets of work are brought together in the literature reviews identified in the 'MOOCs' section of this report.

Southampton's work in creating a MOOC Observatory³ provides a portal where researchers can share data and research, and where they can access public datasets to support their own research. The FLAN network has established a network of researchers who come together to share their work, develop ethical approaches and methodology and identify directions for future study.

The two reports on work associated with FLAN in the UK have identified a series of priority areas for universities. Together, these priority areas suggest a number of research questions for FLAN to address in future; questions that need to be answered if we

are to influence the direction of open education globally and develop a strategic approach to learning at scale.

Research questions for the FLAN network

- Which pedagogies are appropriate for learning at scale, and how can they be used most effectively?
- FutureLearn supports conversational learning. How can this best be implemented?
- Which design patterns are most successful in MOOCs, and how can they be shared successfully?
- What are the best ways of teaching at scale and of training MOOC educators?
- Can we increase alignment between what learners expect and what MOOCs deliver?
- What improvements can we make to the formative and summative assessment on MOOCs?
- How can we increase MOOC accessibility and widen access to learning at scale?
- Can we develop and accredit learning journeys that involve both informal and formal learning?
- How can we ensure that research into MOOCs, including the use of learning analytics to support learning and teaching, is carried out ethically?
- What procedures and practices are needed in order to quality assure MOOCs?

³ <http://blog.soton.ac.uk/mobs/about/>

Table 1: FutureLearn university partners in the UK, showing how many publications a search for 'MOOC' found in the institutional repository and how many of those publications were included in this report. *Open University publications were included in a previous report, as were two University of Birmingham papers co-authored Open University authors.

	University partner	Papers in repository	Papers in report
1	👉 University of Aberdeen	0	0
2	👉 University of Bath	1	1
3	👉 University of Birmingham	2	0*
4	👉 University of Bristol	1	0
5	👉 Cardiff University	15	2
6	👉 University of Dundee	2	2
7	👉 Durham University	1	0
8	👉 The University of Edinburgh	4	4
9	👉 University of Exeter	3	0
10	👉 University of Glasgow	7	5
11	👉 King's College London	3	3
12	👉 Lancaster University	5	2
13	👉 University of Leeds	5	4
14	👉 University of Leicester	10	7
15	👉 University of Liverpool	7	6
16	👉 Loughborough University	0	0
17	👉 The University of Manchester	5	1
18	👉 Newcastle University	1	1
19	👉 The University of Nottingham	8	0
20	👉 The Open University	97	0*
21	👉 Queen's University Belfast	3	0
22	👉 University of Reading	21	15
23	👉 Royal Holloway, University of London	0	0
24	👉 The University of Sheffield	3	2
25	👉 University of Southampton	33	28
26	👉 University of Strathclyde	1	0
27	👉 UCL: University College London	1	1
28	👉 UEA: University of East Anglia	2	1
29	👉 The University of Warwick	33	23

MOOCs

This section deals with publications that take MOOC as their starting point. It includes three literature reviews, introductory pieces and overviews of the field. As this is a broad field of study, this section does not include any specific recommendations for practice, but provides useful background reading for anyone moving into the area of MOOC research and practice.

MOOCs: a systematic study of the published literature 2008-2012

(Liyaganawardena, Adams, & Williams, 2013)

<http://goo.gl/AIB1Yf>

University of Reading

MOOC platform: not applicable

This systematic review of the literature on MOOCs finds that most published work has investigated the learner perspective, with a significant minor focus on institutional threats and opportunities. At the time of writing, there was a lack of published research on MOOC facilitators' experience and practices. Many studies examined participant demographics, mainly in relation to learners from North America and Europe.

See also a related review in Chinese:

(Liyaganawardena, Adams, & Williams, 2014)

Massive open online courses (MOOCs): a review of usage and evaluation.

(Sinclair, Boyatt, Rocks, & Joy, 2015)

<http://wrap.warwick.ac.uk/62769/>

The University of Warwick

MOOC platform: not applicable

This literature review, written in 2013, examines what was known about MOOCs (both those following the original connectivist model and the more traditionally didactic variety) and what indications there were that they could live up to expectations. The authors discuss concerns arising from the review and identify issues including lack of evidence, absence of pedagogy, lack of support and unrealistic expectations, particularly for new learners.

See also: (Boyatt, Joy, Rocks, & Sinclair, 2014)

Personalisation in MOOCs: a critical literature review

(Sunar, Abdullah, White, & Davis, 2016)

<http://eprints.soton.ac.uk/388813/>

University of Southampton

MOOC platform: not applicable

This conference paper presents an analysis of available literature on personalisation in MOOCs. Learning in MOOCs has the potential to spark demands for personalised learning, due to the massive amount of geographically dispersed learners with diverse backgrounds. MOOCs also provide the basic requirements for personalised learning, which include large datasets, flexible learning, and learner-teacher independence. Three types of paper relating to MOOC personalisation were identified: those dealing with motives for implementation, those outlining plans for implementation, and those presenting accounts of implementation. Data-mining techniques are often applied to learner data in MOOCs, and most studies in the area have an interest in pedagogical design issues. Many researchers have proposed approaches such as personalised learning pathways and personalised feedback. There is not yet any research that focuses on building personalised learning networks, even though a need for such research has been identified.

See also: (Sunar, Abdullah, White, & Davis, 2015c)

A research agenda for exploring MOOCs and change in higher education using socio-technical interaction networks

(White & White, 2016)

<http://eprints.soton.ac.uk/388541/>

University of Southampton

MOOC platform: not applicable

Exaggerated claims about the impact of MOOCs on education systems have appeared in various media. How can such claims be effectively investigated? Simplistic, technologically determinist concerns relating to impact mask the complexity of the processes, infrastructure and interactions that are involved in the creation and use of MOOCs. This paper proposes a novel way of researching MOOCs. It argues that the analytic strategy of socio-technical interaction networks (STIN) can highlight the social and technical forces intertwined in the construction and practical use of MOOCs.

The Web in education

(Allison, Miller, Oliver, Michaelson, & Tiropanis, 2012)

<http://dx.doi.org/10.1016/j.comnet.2012.09.017>

University of Dundee

MOOC platform: not applicable

This paper from 2012 looks ahead to the expansion of MOOCs.

A first briefing on MOOCs

(Honeychurch & Draper, 2013)

<http://eprints.gla.ac.uk/93069/>

University of Glasgow

MOOC platform: not applicable

This briefing document refers to other research in order to address frequently asked questions. While informative, it does not present novel findings or recommendations.

Technology-enhanced learning and higher education

(Flavin, 2016)

<http://oxrep.oxfordjournals.org/content/32/4/632.full>

King's College London

MOOC platform: not applicable

This journal paper reviews existing literature on several trends, including MOOCs. It suggests that MOOCs are not as disruptive as some consider them. Broadly, because online learning and degree programmes already exist, the additional value or innovation offered by MOOCs is not yet clear.

How digital technologies, blended learning and MOOCs will impact the future of Higher Education

(Morris, 2014)

<http://eprints.whiterose.ac.uk/81487/>

University of Leeds

MOOC platform: not applicable

This conference paper argues that the distinction between cMOOCs (those that take a connectivist approach) and xMOOCs (those that extend existing teaching and learning) is not helpful in a broader discussion of how to create the future of online learning. Instead, MOOCs that adapt to the individual have the potential to improve experience.

Pedagogy and teaching

This section begins with a paper outlining the challenges that learning at scale poses for pedagogy. Subsequent papers deal with different aspects of pedagogy, including learning design and educator support. The University of Southampton has a well-developed approach to mentoring within MOOCs, and this is outlined within three papers on mentoring.

Liberating learning: experiences of MOOCs

(Wintrup, Wakefield, Morris, & Davis, 2015)

<http://eprints.soton.ac.uk/373639/>

University of Southampton

MOOC platform: FutureLearn

This report complements the understanding of MOOC pedagogies and of learner engagement in MOOCs provided by earlier HEA reports. It investigates the views and experiences of learners who have finished their studies.

Four themes emerged: the fact that MOOCs were flexible, fascinating, and free made for a positive and attractive learning experience; a feeling of being part of something contributed to motivation and staying power; the wide variety of aspects of learning – including time invested, the organisation and pacing of learning, and the ways in which different formats and resources supported learning – were important factors; 'proof' of study, through some form of accreditation, attracted little interest.

The report proposes a useful continuum that connects two primary reasons for study – personal enjoyment and learning for work or professional reasons – with whether learners study alone, or participate strongly in social interaction. The typology provides a way for educators to audit the design of their MOOCs and to incorporate features that, based on the findings of the research, they suggest are likely to enhance the learning experience even more. The report identifies a number of areas for development in future practice. The most relevant to this report are included in the box below.

Recommendations

- Make explicit how to use particular resources, such as videos, or how to structure a debate among peers. Approximate guidance on how long more complex activities require, if deeper learning and integration is to take place, might reduce a sense of simply having to complete tasks.
- Information about what is expected of them, how long an activity is likely to take, whether their learning develops incrementally or instead offers discrete blocks of learning, and how the MOOC is structured, all contribute to facilitating the learning experience and to managing learners' expectations. These subtle indicators need to be carefully thought through so that they are easily visible but do not dominate.
- Close collaboration is required between designers and academic librarians about issues such as guidance and negotiation for copyright and licensing of resources for MOOCs; support for MOOC design; and support for information and digital literacies for educators and learners on MOOCs. Academic librarians also have expertise in helping learners to access resources.
- Emphasise good online practice beyond MOOCs. 'Netiquette' in the form of using inclusive language, demonstrating respect for alternative viewpoints and all the other forms of acceptable social interaction, needs to be endorsed through specific guidance and exemplary practice.

Massive open online courses: an adaptive learning framework

(Onah & Sinclair, 2015c)

<http://wrap.warwick.ac.uk/72925/>

The University of Warwick

MOOC platform: not applicable

This conference paper begins by reviewing the literature on adaptive online learning systems. It goes on to outline a proposed framework, which

tailors the recommendation of instructional material using the learner's profile. In this model, the system presents the user with a suggested learning path to meet appropriate learning objectives. As learners progress, further recommendations can be made to enhance and develop their understanding of topics.

The ethical and social implications of personalization technologies for e-learning

(Ashman et al., 2014)

<http://bit.ly/2fNcCb2>

The University of Warwick

MOOC platform: not applicable

A detailed consideration of the benefits and challenges associated with the use of personalisation in e-learning systems, including MOOCs. Potential ethical and social problems include privacy compromise, loss of serendipity, de-skilling, widening commercial influence, and the commodification of education.

Online collaboration and cooperation: the recurring importance of evidence, rationale and viability

(Hammond, 2016)

<http://wrap.warwick.ac.uk/78273/>

The University of Warwick

MOOC platform: not applicable

This paper investigates collaboration in teaching and learning, drawing out implications for the promotion of collaboration within online environments. The focus is not on MOOCs, but these are included as examples of online environments. First, it explores the case for collaboration, including specifically cooperative approaches. Collaboration is seen as constrained by context but, if structured and rewarded, it will bring important motivational and cognitive benefits. Next, the case for online collaboration is examined. This is based on long-standing arguments about the benefits of working together. Online, this takes place in an environment that offers greater reach, a mix of media, and archives of interaction. The paper compares perspectives on online collaboration with a longer tradition of research into collaboration in general and goes on to consider future directions for promoting online collaboration. It includes some detailed consideration of ways of differentiating strong and weak forms of collaboration and the

kinds of evidence of knowledge building that each requires.

Recommendation

- Using the starting points outlined in this paper, consider how collaboration can be supported and validated within MOOCs.

Digital culture clash: 'massive' education in the E-learning and Digital Cultures MOOC

(Knox, 2014)

<http://hdl.handle.net/1842/8987>

The University of Edinburgh

MOOC platform: Coursera

This analysis of the EDCMOOC finds that participants often perceive massiveness negatively. They can be overwhelmed, overloaded and anxious, finding a course at this scale alien to them. Scale is what is really new about MOOCs but is something that the pedagogies that are used (whether instructionist, constructivist or connectivist) seek to reduce. It is not currently clear how massiveness is of value to education. Acknowledging differences across a MOOC community could be one way in which scale adds value.

Recommendation

- Understand that massive scale might provide a negative experience for participants. Decide what is educationally valuable about learning at scale and then work with the massive rather than against it.

Strategies in traditional higher education: lessons from a newcomer?

(De Jonghe, 2014)

<http://eprints.soton.ac.uk/369398/>

University of Southampton

MOOC platform: not applicable

Although this thesis is not focused on MOOCs, it makes some suggestions as to how MOOCs can best be developed and their contribution to the pedagogical and organisational model. It suggests that the exploitation of economies of scope offers the possibility for face-to-face, blended and online course programmes to support each other by sharing knowledge and pedagogical innovation.

'Sizing up' the online course: adapting learning designs to meet growing participant numbers

(Watson, 2014)

<http://eprints.soton.ac.uk/372728/>

University of Southampton

MOOC platform: not applicable

Online course design experienced an upheaval with the arrival of MOOCs. The development of a pre-arrival online distance-learning course for international students between 2005 and 2014 illustrates the development of online learning design over time. This course shifted from small tutored groups of 25 to an open student-driven course for over 2,500 participants. This conference paper identifies features of the learning design that have changed and those that have remained constant, and outlines adaptations made to cater for growing numbers of participants. It illustrates how an online course can benefit from Web 2.0 innovation, openness and the impact of MOOCs. Modifications to course tools, technologies and designs have been driven by a desire to improve student experience. This has resulted in a hybridised approach to course design, retaining a core of provided course content and blending this with the connectivist possibilities produced by scaling up the course.

What do MOOCs contribute to the debate on learning design of online courses?

(Hatzipanagos, 2015)

<http://goo.gl/uXO7Zc>

King's College, London

MOOC platform: not applicable

This journal paper explores the learning design characteristics of MOOCs with regards to independent learning and student support. It argues that design patterns are a suitable approach given the common theme and need to share good practice. It finds that debates in this area are often guided by the premise that MOOCs should be designed to support self-regulated learners.

Recommendation

- Use design patterns to capture and share learning design innovations in MOOCs.

MOOC mentor interventions towards a connected learning community

(León Urrutia, White, White, & Dickens, 2015)

<http://eprints.soton.ac.uk/373982/>

University of Southampton

MOOC platform: FutureLearn

This conference paper explores a novel approach to MOOC course management and facilitation. It focuses on the training, management, and intervention strategies of course mentors. The paper outlines a cloud-based, flexible and collaborative system for managing and connecting mentors. This proved useful when organising a geographically distributed group of mentors. In the context of social learning at scale, a role of 'mentor as connector' is proposed to align with the affordances of the FutureLearn MOOC platform and the design of specific courses.

See also: (León Urrutia & White, 2015)

Learning from MOOCs: the role of mentor qualities

(León Urrutia, Yousef, & White, 2015)

<http://eprints.soton.ac.uk/378532/>

University of Southampton

MOOC platform: FutureLearn

This workshop paper argues that mentor support in the delivery stage of a MOOC supports the attainment of effective learning. Mentors in MOOCs can contribute to enhanced learning outcomes by supporting the alignment of assessment and learning activities.

Recommendation

- MOOC design should take into consideration how mentors will support each of its activities and each element of assessment.

Student success on face-to-face instruction and MOOCs

(Wilde, Zaluska, & Millard, 2015)

<http://eprints.soton.ac.uk/377682/>

University of Southampton

MOOC platform: not applicable

This short paper suggests that, despite the differences between face-to-face education

and MOOCs, the success factors in these learning contexts are comparable. Learning analytics have the potential to help identify students at risk so that institutions can engage in timely intervention.

Opportunities and challenges in personalized MOOC experience

(Yousef & Sunar, 2015)

<http://eprints.soton.ac.uk/378576/>

University of Southampton

MOOC platform: not applicable

This short conference paper describes five challenges that can limit the personalisation of MOOCs. Learners are diverse, the curriculum can be rigid, it is difficult to provide teaching assistance, there are limited approaches to assessment and feedback, and tracking user data raises privacy issues.

Design Science MOOC: a framework of good practice pedagogy in a novel E-Learning platform eLDa

(Onah & Sinclair, 2016a)

<http://wrap.warwick.ac.uk/79746/>

The University of Warwick

MOOC platform: eLDa

The eLDa platform has been developed to motivate learners to participate in and complete courses. It is a MOOC platform that gives learners the ability to decide how they organise their study patterns. The platform runs guided structured courses. Learners can decide how to move through these, or can follow the instructor-recommended route to achieve their learning goals.

Three perspectives on hybridising x and c MOOCs to create an online course on digital CVs

(McGuire, Raaper, & Nikolova, 2016)

<http://eprints.gla.ac.uk/129846/>

University of Glasgow

MOOC platform: FutureLearn

This journal paper focuses on combining two innovations: a MOOC and a digital CV. Data collected from course creators are presented, giving their perspectives.

Being social or social learning: a sociocultural analysis of the FutureLearn MOOC platform

(Tubman, Oztok, & Benachour, 2016)

<http://eprints.lancs.ac.uk/80383/>

Lancaster University

MOOC platform: FutureLearn

This poster presents an analysis of FutureLearn interaction data across six courses, including ten presentations. Conversations are deemed to be mainly short and to constitute 'surface level' interactions.

The rise of the video-recorder teacher: the sociomaterial construction of an educational actor

(Perrotta, Czerniewicz, & Beetham, 2015)

<http://eprints.whiterose.ac.uk/84944/>

University of Leeds

MOOC platform: FutureLearn

This journal paper examines the emergence of a hybrid form of educational actor, the digital video-recorder (DVR) lecturer. The videos produced are highlighted as a key feature of xMOOCs and the broadcast approach linked to television consumption and a societal push for 'pick and mix' self-improvement through consumption of educational videos. The paper suggests that much MOOC engagement can be characterised as educational video watching.

Accessibility

In theory, MOOCs should open up higher education to millions who were previously unable to access it. The papers in this section show that progress in this area is currently limited for various reasons.

The majority of those engaging with MOOCs have already had a university education and this could be because MOOCs have not yet genuinely engaged with the implications and challenges of global online education.

In a global context, many potential students experience barriers to access that include language difficulties, access to technology and a lack of digital skills.

Massive open online courses

(LiyanaGunawardena, 2015)

<http://www.mdpi.com/2076-0787/4/1/35/htm>

University of Reading

MOOC platforms: Coursera, EdX and FutureLearn

This journal paper deals with the accessibility of MOOCs for different groups. An analysis of learner demographics (largely based on existing literature) suggests that the majority of those served by MOOCs have already had a university education. This means that MOOCs are increasing access to higher education rather than broadening access. This may be because people with a higher education have better access to MOOCs, they are better prepared for the self-learning required in these courses, and they are less worried about recognition than learners without higher educational qualifications who have to prove their skills to employers. MOOCs appear to be serving the continuous professional development sector by fulfilling the needs of knowledge workers to update their skills and engage in continued professional development.

See also: (LiyanaGunawardena, Lundqvist, Parslow, & Williams, 2014)

MOOCs@Edinburgh 2013 – Report #1

(University of Edinburgh, 2013)

<https://www.era.lib.ed.ac.uk/handle/1842/6683>

University of Edinburgh

MOOC platform: Coursera

This report describes a project at Edinburgh that worked with Coursera to produce six MOOCs. The report includes basic data on the popularity of these. It notes that an unexpected population with high educational attainment was found. Variable drop-out rates are also identified.

Posthumanism and the massive open online course: contaminating the subject of global education

(Knox, 2015)

<http://hdl.handle.net/1842/15895>

The University of Edinburgh

MOOC platform: not applicable

This doctoral thesis explores and challenges the rationales that are presented for MOOCs. These include an uncritical view of universal humanity that ignores global diversity in education, and the use

of MOOCs as tools for autonomous learners who are looking for access to elite western education. The thesis concludes that neither MOOCs based on constructivist principles nor those based on massive scale are a genuine engagement with the potentials and problems of global online education.

Positioning extension massive open online courses (xMOOCs) within the open access and the lifelong learning agendas in a developing setting

(Nkuyubwatsi, 2016)

<http://hdl.handle.net/2381/37804>

University of Leicester

MOOC platforms: Coursera and FutureLearn

This journal paper considers whether MOOCs contribute to supporting underprivileged learners in Higher Education through alignment with an open access or a lifelong learning agenda. Reasons why particular MOOCs might support such learners are given with reference to ten MOOCs. The paper argues that open licensing provides an opportunity to overcome technical barriers and allow content adaptation. It also argues that the lifelong learning agenda mainly focuses on those who already have some education.

A personal reflection on developing a digital accessibility MOOC compared to developing a traditional course

(Wald, 2016)

<http://eprints.soton.ac.uk/398230/>

University of Southampton

MOOC platform: MOOCAPP

This conference paper presents a personal reflection on developing a Digital Accessibility MOOC and compares the process to developing a traditional course on the same topic. The few people who currently teach about accessibility on face-to-face university courses are only reaching a very small number of people whereas many tens of thousands can potentially learn through a MOOC.

The impact and reach of MOOCs: a developing countries' perspective

(Liyangunawardena, Williams, & Adams, 2013)

<http://bit.ly/2g3OKCI>

University of Reading

MOOC platform: not applicable

The use of MOOCs in developing countries may be limited due to barriers including access, language, and computer literacy. These barriers mean that MOOCs may not be a viable solution for education in these areas of the world. The paper raises the need for more data on the demographics of MOOC participants from developing countries.

See also: (Liyangunawardena, Adams, Rassool, & Williams, 2013)

See also: (Liyangunawardena, Williams, & Rassool, 2013)

Evaluation of massive open online courses (MOOCs) from the learner's perspective

(Nkuyubwatsi, 2013)

<http://hdl.handle.net/2381/28553>

University of Leicester

MOOC platforms: Coursera and connectivist

MOOC OCL4Ed

This conference paper provides an individual account of involvement with MOOCs as a learner, in the context of the potential to help Rwanda.

Cultural translation in massive open online courses (MOOCs)

(Nkuyubwatsi, 2014b)

<http://hdl.handle.net/2381/28554>

University of Leicester

MOOC platform: Coursera

This journal paper discusses how MOOCs are made relevant to students in their cultural settings. Practices that enable such contextualisation, or cultural translation, were investigated in five MOOCs. Cultural translation was enabled in the course design of two MOOCs and in the forum discussions of all five MOOCs.

The MOOC design that enabled cultural translation included activities, tasks and assignments that were applicable to students' settings and that left students free to choose the setting of their projects and people they worked with.

Students in all five MOOCs created informal study groups based on geographical location, language and professional discipline. The findings of this study can inform best practices in designing and learning courses addressed to a culturally diverse group.

Elderly learners and massive open online courses: a review

(LiyanaGunawardena & Williams, 2016)

<http://bit.ly/2fc6knn>

University of Reading

MOOC platform: FutureLearn

The authors examined the percentage of elderly people taking part in a number of MOOCs and found that up to 13% are over 66 years old and up to 39% over 56 years old. Six MOOCs presented topics related to the elderly. The paper suggests that MOOCs could engage elderly people as learners or facilitators in order to tackle loneliness. This approach would also benefit society by making use of the knowledge and experience accumulated by older adults.

Retention, motivation and engagement

The size of this section is an indication of the importance of retention, motivation and engagement on MOOCs. The number of times these issues are reported also suggests they are amongst the easiest to research. As a body of research, though, this work shows a variety of nuanced approaches. Engagement is measured in different ways, and there is consideration of user behaviour, learner networks, learner experience, patterns of discussion and modes of participation. Many of these papers included recommendations for future action. Potentially the most significant work in this area is the development of the MOOC Observatory at the University of Southampton, enabling researchers to share datasets and research.

MOOCs: what motivates the producers and participants?

(White, Davis, Dickens, León Urrutia, & Sánchez-Vera, 2015)

<http://eprints.soton.ac.uk/370440/>

University of Southampton

MOOC platform: not applicable

This paper examines the motivations of higher education institutions for making MOOCs and the motivations of learners for registering and

completing them. Institutions can see MOOCs a way of enhancing the institution's reputation, not only in the subject area of the MOOC, but also in the area of quality online learning. Within a university, the enthusiasm and skills that go into producing MOOCs are the same that are needed to develop internal capacity for engaging with and producing high quality on-line learning courses. The authors expect to see universities purposefully using their MOOC material to add value to their accredited courses, resulting in much softer dividing lines between accredited courses and MOOCs, on-campus education and off-campus education. From the point of view of learners there are two important groups – those who see MOOCs as a form of edutainment that provides intellectual stimulation, and those seeking educational improvement.

See also: (Davis, Dickens, León Urrutia, Sánchez-Vera, & White, 2014)

MOOCs inside universities: an analysis of MOOC discourse as represented in HE magazines

(White, León Urrutia, & White, 2015)

<http://eprints.soton.ac.uk/373981/>

University of Southampton

MOOC platform: not applicable

Digital news media discourse on MOOCs has been pervasive in educational publications over recent years, and has often focused on debates about the disruptive potential of MOOCs at one extreme, and their survival at the other. This conference paper focuses on the main concerns of university stakeholders in terms of their MOOC development and implementation work, and whether these concerns are reflected in the mainstream educational media. Findings indicate a clear focus in education media and among university stakeholders on new teaching practices and working dynamics as a result of involvement in MOOC development work. For many working on MOOCs in Higher Education, the debate about the future of MOOCs is over, and more practical concerns relating to appropriate implementation and effective working practices are of greater importance.

Engaged learning in MOOCs: a study using the UK Engagement Survey

(Wintrup, Wakefield, & Davis, 2015)

<http://eprints.soton.ac.uk/373640/>

University of Southampton

MOOC platform: FutureLearn

This detailed report, commissioned by the Higher Education Academy (HEA), used the UK Engagement Survey (UKES 2014) to research two MOOCs with the aim of exploring the type and degree of engagement reported by learners. Both courses elicited a broadly similar distribution of responses, which differed markedly from the responses of students in Higher Education. Differences between the two MOOCs also emerged in areas such as feeling challenged to do the best work; forming new understandings; and the application, analysis and evaluation of information. This suggests specific forms of learning are sensitive to MOOC pedagogy and curricula, and that design and teaching approaches can elicit particular forms of engagement. Learner characteristics and engagement show MOOCs have the potential to attract and engage a very diverse cohort, and to connect inter-generational and international networks of learners. As stand-alone experiences, without academic recognition, however engaged and persistent the learners, it is difficult to see where and how MOOCs in their current form will serve to widen access. The report makes a series of detailed recommendations targeted at curriculum developers and learners, Higher Education providers and marketing teams, researchers and policymakers. The most relevant to this report are included in the boxes below.

Recommendations

- Curriculum developers and learners would benefit from putting measures in place in order to discover what aspects of their courses engage learners, and how particular activities engage different types of learners
- The independent learning activities most suited to online learning could be made explicit to learners.
- Curriculum developers could enable learners to be more strategic and to make more informed choices about how to spend time and invest energies by making it clear what social learning and interactivity contribute to engaged learning.
- Providing guidance about ways to apply new knowledge to 'real world' problems could be helpful in deepening and sustaining understanding and promoting creativity. Including and eliciting learners' own ideas and projects would also be a way of developing greater involvement.
- MOOC developers might usefully create more effective opportunities for self-directed and open-ended learning.
- If the development of more social forms of learning is a goal, then MOOC development teams might usefully consider how the diversity, commitment and focused interests of MOOC learners could best be harnessed and used to promote the formation of networks and communities.
- MOOCs need to reach different sections of the population if the objective of widening access to study in Higher Education is to be achieved.
- Marketers and those communicating key messages about MOOCs need to consider in greater depth how to attract a more diverse cohort.
- Accreditation of learning in ways aligned with university entry requirements is necessary if MOOCs are to become part of the landscape of Higher Education and provide a route to the full range of higher-level learning.
- Further research is necessary in order to gain a deeper understanding of the educational role of MOOC peer communities and their interactivity if MOOC teams are to make informed decisions about how best to invest time supporting learners.

Student engagement in massive open online courses

(Sinclair & Kalvala, 2016)

<http://wrap.warwick.ac.uk/78141/>

The University of Warwick: Abstract only

MOOC platform: not applicable

Analysis of MOOC drop-out rates has often focused on patterns of resource access and prediction of drop-out. However, higher education is increasingly assessed by surveys measuring student engagement. These conceptualise engagement in a way that is much richer and more informative than the way in which MOOC engagement is currently interpreted. This paper considers MOOC participation, learning and drop-out in the context of this richer conceptualisation of student engagement. The authors identify the need for a MOOC engagement model and make recommendations for initial steps that MOOC developers can take towards improving engagement.

See also: (Sinclair & Kalvala, 2015)

How should we measure online learning activity?

(O'Riordan, Millard, & Schulz, 2016)

<http://eprints.soton.ac.uk/390338/>

University of Southampton

MOOC platform: FutureLearn

Participation in MOOC comment forums was evaluated using four different analytical approaches: the DiAL-e framework, Bloom's Taxonomy, Structure of Observed Learning Outcomes (SOLO) and Community of Inquiry (CoI). Bloom's Taxonomy maps learning to six categories of knowledge acquisition, the SOLO taxonomy distinguishes five levels of comprehension, CoI distinguishes the processes of higher-order thinking within four types of dialogue, and DiAL-e uses ten overlapping categories to describe engagement with learning activities. A sample of 600 of a set of 20,000 comments was coded. Results indicate that different approaches to measuring cognitive activity are closely correlated and are distinct from typical interaction measures. This suggests that computational approaches to pedagogical analysis may provide useful insights into learning processes.

Dropout: MOOC participants' perspective

(LiyanaGunawardena, Parslow, & Williams, 2014)

<http://bit.ly/2fhEh4m>

University of Reading

MOOC platforms: various

This conference paper reports six interviews with MOOC participants about their perceptions in relation to the concept of MOOC drop-outs. Participants viewed dropping out as a failure to fulfil personal aims. Due to the voluntary nature of engagement with MOOCs, they challenged the definition of drop-outs as 'all who failed to complete' a course.

Recommendations

- Consider how to define a drop-out in the context of MOOCs and consider whether they should be considered in the same way as other types of online course.
- Take into account MOOC participants' perspectives on what they aim to achieve by joining a MOOC.

MOOC experience: a participant's reflection

(LiyanaGunawardena, 2014)

<http://centaur.reading.ac.uk/36437/>

University of Reading

MOOC platform: connectivist MOOCs and Moodle

In this newsletter article, the author reflects on her experiences on three MOOCs: Edfuture (CHFE), Learning Design for 21st Century Curriculum (OLDS-MOOC), and Open Education (H817). The paper discusses perceived differences between open educational resources and MOOCs and questions definitions of success, engagement, completion, and drop out in the context of MOOCs. Some lessons learnt as a participant are also discussed.

Participants' perceptions of a MOOC

(Murray, 2014)

<http://eprints.gla.ac.uk/111422/>

archived at University of Glasgow, authors were from The University of Edinburgh and University of Birmingham

MOOC platform: Coursera

This journal paper explores participant perceptions of a MOOC on equine nutrition. Participants rated the content, quizzes, and lectures more highly than the discussions and had mixed reactions to interaction with peers and tutor. A nuance to these findings is participant expectations for interaction with tutors and each other.

Recommendations

- Promote a sense of tutor presence and engage with discussion boards.
- Make etiquette for discussions clear.

A cross-modal analysis of learning experience from a learner's perspective

(Nkuyubwatsi, 2014a)

<http://hdl.handle.net/2381/28983>

University of Leicester

MOOC platforms: Coursera and connectivist

MOOC OCL4Ed

This journal paper explores four different modes of learning: face-to-face, self-guided, online and MOOCs. MOOCs are seen to share drawbacks of online learning with the added issue of loose structure and an overwhelming level of conversation. The point is made that MOOCs can form a valid part of a learner experience that combines these modes.

Who are with us: MOOC learners on a FutureLearn course

(Liyaganawardena, Lundqvist, & Williams, 2015b)

University of Reading

MOOC platform: FutureLearn

MOOCs attract learners from a variety of backgrounds. This journal article focuses on a FutureLearn MOOC that had run twice at the time of writing and that engaged learners with the use of game development. The paper explores the characteristics of the two learner groups and their perceptions of the course.

Recommendations

- Using a game as a vehicle can be an attractive way to introduce difficult concepts to a wider audience, even in a MOOC. This may particularly be a good way to promote introductory Science, Technology, Engineering and Mathematics (STEM) subjects.
- When designing a MOOC, it is important to concentrate on the target learner group, but it may be a good idea to provide possible pathways for other learners.
- A course cannot be made for everyone but you can allow possible alternative pathways while concentrating on the original target audience.

First day stands out as most popular among MOOC leavers

(Nazir, Davis, & Harris, 2015)

<http://eprints.soton.ac.uk/378578/>

University of Southampton

MOOC platform: FutureLearn

This journal paper studies the enrolment data of three FutureLearn MOOCs and finds that, on any given day in its lifecycle, the highest number of students leave the course on the first day they join it. It proposes three ways of facilitating the process of bringing people into a MOOC: briefing, buddying and feedback.

Recommendations

- Make an up-to-date recap of each MOOC available at any time. This will help new arrivals to catch up with the course.
- New arrivals should be 'buddied up' with more experienced MOOC learners, who can help them to understand the way the MOOC operates. Research in other fields shows that early socialisation experiences have a long-term impact on newcomers' satisfaction, performance, and intention to stay in a group.

- First-time posters who receive a response in an online community are more likely to post again or to post sooner. Put a system in place to raise the priority given to responding to a learner's first post.

Exploring the use of MOOC discussion forums

(Onah, Sinclair, & Boyatt, 2014b)
<http://wrap.warwick.ac.uk/65549/>
 The University of Warwick
 MOOC platform: eLDA

This conference paper reports a study of the use of discussion forums on a MOOC that attracted over 500 participants. There were several different forums, including a programming forum, a concepts forum and a teaching forum. Tutor-monitored forums were also available to paying students. Levels of peer-to-peer discussion were low.

See also: (Onah, Sinclair, & Boyatt, 2015)

Design patterns for promoting peer interaction in discussion forums in MOOCs

(Liyangunawardena, Kennedy, & Cuffe, 2015)
<http://bit.ly/2efqPAG>
 University of Reading
 MOOC platforms: FutureLearn, The Open University, Bloomsbury Learning Environment and Coursera

This journal paper presents three design patterns related to peer interaction and discussion in MOOCs. The three patterns are:

- (1) Special Interest Discussions: MOOC instructors group discussion areas for special interest groups to help discussions and identification of a group with similar interests,
- (2) Celebrity Touch: MOOC instructors highlight posts that help understanding and broaden discussions by responding to them. These posts receive more attention from learners.
- (3) Look and Engage: MOOC instructors ask learners to post an image or video, create a resource together, and tag one of them to create a discussion around it.

Recommendations

- Make use of design patterns as a way to showcase successful learning activities and share them across modules and faculties.
- Create subgroups within discussion areas to organise learners and help them identify and comment on content they are interested in, highlight content that contributes to learning by commenting on it, and ask learners to post media items in the discussion and comment on them to initiate interactions and communication.

Analysing and predicting recurrent interactions among learners during online discussions in a MOOC

(Sunar, Abdullah, White, & Davis, 2015a)
<http://eprints.soton.ac.uk/381181/>
 University of Southampton
 MOOC platform: FutureLearn

High attrition rates are one of the biggest concerns in MOOCs. One of the possible causes may be learners' lack of interaction and low levels of participation in MOOCs online discussions. This paper investigates learners' interaction habits and their recurrent interactions during a MOOC, and proposes a method to measure the interactions and predict possible interactions between peers. The study found that when a learner interacts with a peer, they are likely to interact again in the following weeks.

Analysis of social learning networks on Twitter for supporting MOOCs education

(Sunar, Abdullah, White, & Davis, 2015b)
<http://eprints.soton.ac.uk/381180/>
 University of Southampton
 MOOC platform: not applicable

Low completion rates in MOOCs could be due to the one-size-fits-all pedagogical approach and ineffective peer communication on social platforms. One suggestion is that learners who engage in social discussion forums are less likely to leave a course. Consequently, researchers are using online social network analysis techniques to analyse and promote learners' social media interactions. This short conference paper briefly outlines work

to address the drop-out problem by designing a recommender system that encourages peers' contributions to online discussions.

Community tracking in a cMOOC and nomadic learner behavior identification on a connectivist rhizomatic learning network

(Bozkurt et al., 2016)

University of Glasgow

MOOC platform: connectivist MOOC #rhizo15

This journal paper analyses Twitter interactions around a connectivist MOOC, using social network analysis and content analysis. Hashtags are used to understand macro-level activity, where nomadic learners move among communities and the hashtags act as a form of social glue. While dropouts increase over the MOOC, the remaining learners appear to communicate more and to bond as communities. Rhizomatic learning is seen to be an appropriate way of understanding this nomadic approach to MOOC learning. The limitations associated with analysing a single social network are also highlighted.

Recommendation

- MOOC interactions should be expected to cross platforms and to form sub-communities within those platforms. Hashtags provide an essential means for communities to form, so their use should be encouraged.
- Recognise that learners will be nomadic and will move between communities.

Dropout rates of massive open online courses: behavioural patterns.

(Onah, Sinclair, & Boyatt, 2014a)

<http://wrap.warwick.ac.uk/65543/>

The University of Warwick

MOOC platform: eLDa

This paper reports initial results from a MOOC with two modes: one with minimal tutor support, the other with small group tutor support. The main MOOC was free but the tutoring element incurred a cost of £100. Although numbers were fairly small, particularly for the supported version (N=30), the results show a higher percentage of supported students completing each quiz. However, most of

the supported students did not make use of the real-time tutorial sessions or the tutor-monitored forum so improvement in performance cannot be attributed to tutoring.

Recommendations

- Some students are willing to pay for additional tutor support in a MOOC, so this is an option worth exploring.
- Some learners continue to study the MOOC after its end date and these learners might be better served by an open-ended course such as one on OpenLearn.

Collaborative filtering recommendation system: a framework in massive open online courses

(Onah & Sinclair, 2015a)

<http://wrap.warwick.ac.uk/72826/>

The University of Warwick

MOOC platform: not applicable

A collaborative filtering method can be used to evaluate a set of items based on the rating choices of participants. This paper proposes a method that would allow MOOC learners to rate any course they study on a scale of 1-5. This rating would be stored in a comma-separated variable (CSV) file and later exported to a directory, where it could be used to create recommendations by using a collaborative filtering algorithm.

Visualising the MOOC experience: a dynamic MOOC dashboard built through institutional collaboration

(León Urrutia, Cobos, Dickens, White, & Davis, 2016)

<http://eprints.soton.ac.uk/390688/>

University of Southampton

MOOC platforms: EdX, FutureLearn

This conference paper presents outcomes of collaborative work between two European universities investigating FutureLearn platform datasets. It reports the development of a MOOC data visualisation suite, the UoS MOOC Dashboard. Tools like this can display both up-to-date and historical information on how courses are progressing, presenting analytical data to different institutional stakeholders such as learning designers, educators, facilitators, and administrators.

Cross-institutional MOOC data analysis and visualisation: a call for collaboration

(León Urrutia, Wilde, White, Earl, & Harris, 2016)

<http://eprints.soton.ac.uk/396987/>

University of Southampton

MOOC platform: not applicable

This PowerPoint presentation introduces an integrated toolset and data infrastructure – the MOOC Observatory and the University of Southampton Web Observatory. It outlines types of research into MOOC data, including text mining, social network analysis, and social media analysis. The intention is that the MOOC Observatory will be used as a portal that enables researchers to access public datasets to support MOOC research, and that acts as a repository for the sharing of datasets and research. For more, see <http://blog.soton.ac.uk/mobs/about/>

Recommendation

- Explore the possibility of using the observatories and dashboards reported in these two papers to make FutureLearn MOOC data easily accessible to a wide range of educators.

Understanding persuasive technologies to improve completion rates in MOOCs

(Wilde, 2016)

<http://eprints.soton.ac.uk/394560/>

University of Southampton

MOOC platform: not applicable

MOOC providers could, in future, be able to predict and facilitate student success by applying learning analytics techniques to the large amount of data they hold about their learners. Key information about successful student behaviour and context could be accessed and used in digital interventions.

This short position paper discusses how learning analytics might be combined with persuasive technologies in order to improve MOOC completion rates.

MOOC assessment and accreditation

Assessment and accreditation in MOOCs are tough challenges. Many learners do not simply want more knowledge and skills; they want evidence that they have engaged with and completed courses. In addition, formative assessment is an important aspect of the learning process and so educators would like to be able to include this in their courses.

Two of the papers in this section are reports commissioned by the European Commission, indicating that these problems are being considered at a high level. Overall, though, there is little work in this area.

The papers here cover different forms of assessment, focusing mainly on peer review. They also deal with soft certification in the form of badging, and more conventional forms of certification, particularly university credit.

Is peer review an appropriate form of assessment in a MOOC?

(Meek, Blakemore, & Marks, 2016)

<http://eprints.gla.ac.uk/121718/>

University of Glasgow

MOOC platform: FutureLearn

This journal paper explores how appropriate peer review is as a means of assessment in MOOCs. It reports that higher performance, participation and quality of peer reviews were found to correlate, so good students do well with peer review. There were problems with poor quality or random text being submitted for peer review. Qualitative analysis suggested that learners had mixed opinions about peer review.

Recommendation

- When designing peer review, include a clear option to opt out of submission and review activities, differentiated support or peer groups for students with different ability levels, and opportunities to improve peer review skills.

Pedagogical strategies and technologies for peer assessment in massively open online courses (MOOCs): discussion paper

(O'Toole, 2013)

<http://wrap.warwick.ac.uk/54602/>

The University of Warwick

MOOC platform: not applicable

Peer assessment offers a strategy for scaling up higher education and its core values. This discussion paper explores the potential role of peer assessment in MOOCs, and its technology requirements. The paper identifies learning design strategies, patterns and technologies that offer possible ways in which peer assessment in MOOCs of various kinds might be implemented. For example, progression in peer assessment capability and responsibility might be deliberately structured, using a learning design that includes phases of activity, peer assessment, reviewing and reflecting upon the assessor's assessment, learning to be a better assessor, further activity and further assessment. In another case, each student, over time, would have opportunities to develop a portfolio of peer assessment work. The paper ends by outlining six design patterns to support peer assessment in MOOCs.

Recommendation

- Using this paper as a starting point, consider ways in which peer assessment can be successfully incorporated within MOOCs.

Bayesian modelling of community-based multidimensional trust in participatory sensing under data sparsity

(Venantzi, Teacy, Rogers, & Jennings, 2015)

<http://eprints.soton.ac.uk/376365/>

University of Southampton

MOOC platform: not applicable

This highly technical conference paper proposes a method that could be applied to the crowd-sourced peer reviewing of learner assessments in MOOCs. When peer reviewing, learners may be imprecise, and they may tend either to mark high or to mark low. In other contexts, various methods have been proposed to calculate crowd consensus from reported data. Those that take into account factors such as user trustworthiness, user bias and task difficulty have proved more accurate

than others that treat all participants as equally trustworthy. Alternatives such as reputation systems and gold-standard-driven trust mechanisms rely on the true value of estimated quantities being revealed at some point, which is not the case with peer assessment. By generalising from the reporting behaviour of a community as a whole, the authors are able to draw inferences about user reliability.

Enhancing Synote with quizzes, polls and analytics

(Wald & Li, 2015)

<http://eprints.soton.ac.uk/383320/>

University of Southampton

MOOC platform: not applicable

Videos combined with quizzes and polls are used for educational purposes in many settings, including MOOCs. Authors often split videos into sections followed by a poll or quiz to gauge understanding. This approach requires video-editing skills, and can be time-consuming. It would be useful if quizzes could be created and included directly within videos. This paper describes the development of three tools to enhance the web-based video-annotation system, Synote. The Quiz Authoring Tool allows users to specify sets of questions and polls to appear in the video, the time at which question sets should appear, and actions to be taken when questions are answered. The Questions Overlay library enables quizzes and polls to be overlaid on videos. Video and Quiz Analytics are used to record metrics of user behaviour.

A new approach to assessing online intercultural exchanges: soft certification of participant engagement

(Hauck & MacKinnon, 2016)

University of Birmingham

<http://wrap.warwick.ac.uk/79396/>

MOOC platform: not applicable

There are many challenges to the adoption of telecollaborative activity, also known as virtual exchange or OIE. These include both assessment and official accreditation. Task-based MOOCs that emphasise skill development through task completion, particularly those that rely on learner collaboration, have many similarities to OIEs. This chapter proposes a framework for the recognition of learning efforts based on the use of Open Badges for certification of engagement and task

execution. An Open Badge is a digital image with encoded metadata, which can be displayed online as evidence of an achievement.

The paper identifies 12 roles for badges: as a motivator, to promote engagement, to prevent withdrawal, as a meaning maker, as a signifier of learning objectives, as a low-cost option, as a low-effort option, as a valuer, as a symbol of identity, as a means of association, as empowerment and as an entrencher.

Recommendations

- The badge schema should be given a prominent place within the MOOC so that it is accessible to learners at all times and encourages badge collection.
- Badge-award messages should be pushed out as soon as badges have been awarded, in order to establish a clear link between the award and the associated task.
- Explain the value of earning badges both within the MOOC and after completion.
- In order to increase and award engagement, some badges should be available at the start of tasks, to acknowledge engagement up to that point.
- When aligning badges with learning outcomes, ensure that the learning remains meaningful.
- Including badges as part of a MOOC design offers opportunities to reflect upon the assumptions that underpin the pedagogic approach and to reflect on the intended learning outcomes.

OpenCases: case studies on openness in education

(Souto-Otero et al., 2016)

<http://orca.cf.ac.uk/91499/>

Cardiff University

MOOC platform: not applicable

Report on research relating to a set of case studies of openness in higher education across institutions. The main outcome of the study is evidence that a

large number of open educational resources have reached many learners. However, completion rates for MOOCs are low, accreditation is not formalised and, in general, their effect on employability is not measured.

Recommendations

- Involve sector, national and European institutions in open education initiatives
- Produce coherent curricula in open education.
- Measure inputs and outcomes of open educational initiatives, and the profiles of users, in order to identify implications for strategy.

Validation and open educational resources (OER). Thematic report for the 2016 update of the European inventory on validation

(Devaux & Souto-Otero, 2016)

<http://orca.cf.ac.uk/94067/>

Cardiff University

MOOC platform: not applicable

This report explores the relationship between validation and OER, including MOOCs, which are considered to be a manifestation of OER. It suggests four ways in which OER can be linked with validation and reviews current examples in these areas.

- (1) Identification: awareness of standards, competences and gaps in learners' knowledge.
- (2) Documentation: support to document non-formal learning by referring to open courses.
- (3) Assessment: self, peer, or institutional assessment linked to OER.
- (4) Certification: for example, waiving requirements to complete other courses or as a means to awards.

Recommendations

- Expand the options of what can be validated, making it possible to work towards full qualifications
- Make stakeholders aware of the options for validation through OER/MOOCs, relating this to why recognition is sought
- Improve measures to link learning gained through OER with generic systems for non-formal and informal learning.

Validation of non-formal MOOC-based learning: an analysis of assessment and recognition practices in Europe (OpenCred)

(Witthaus et al., 2016)

<http://hdl.handle.net/2381/37805>

University of Leicester

MOOC platforms: Coursera, EdX, FutureLearn, iversity, Miríada X

This report deals with a study to inform the debate on recognition of MOOC-based learning. A review of the area is combined with a small interview study. Conclusions include a perceived lower value to non-formal online accreditation, lack of integration with existing recognition of prior learning mechanisms, and concerns about the wider impact on the HE sector of unbundling provision.

Recommendations

- Provide transparent information to learners, institutions and employers using the OpenCred model.
- Consider ways of supporting credit transfer.
- Provide guidance to MOOC learners on options for recognition of non-formal learning, as there is often limited awareness.

Massive open online courses offering university credit

(Alston, 2014)

<http://repository.liv.ac.uk/2014102/>

University of Liverpool: Abstract only
MOOC platform: not applicable

This conference paper examines whether MOOCs

can be disruptive to Higher Education and investigates whether a 'one of a kind' module to be delivered in the MOOC format could be validated, allowing learners to achieve 20 credits at a UK university.

'A hostage to fortune?' – validating massive open online courses (MOOCs) for university credit

(Alston & Brabon, 2014)

<http://bit.ly/1i73wRX>

University of Liverpool

MOOC platform: university VLE

This conference paper examines the experience of validating and delivering the UK's first undergraduate MOOC for credit. This MOOC was run in the same way as other modules at the university through a transmission-based model for the delivery of material that offered personalisation of learning by allowing learners to choose when to access it. The authors argue that accreditation processes work against the principles of openness that should underpin MOOCs.

Recommendations

- Accreditation should be addressed without sacrificing quality.
- MOOCs offering accreditation should take into account the needs of learners and should consider how accreditation impacts on pedagogy.

Study skills

This short section deals with a body of work by a team at The University of Warwick. These papers examine in detail the Computing for Teachers MOOC on the eLDa platform, with a focus on learners' strategies for self-regulated learning.

A study of user participation across different delivery modes of a MOOC

(Sinclair, Boyatt, Foss, & Rocks, 2016)

<http://wrap.warwick.ac.uk/78140/>

The University of Warwick

MOOC platform: eLDa

This paper reports results and experience from developing and presenting a MOOC that provides both 'traditional' and supported modes. Users can opt to study the course in the way familiar within most MOOCs (with peer support and limited tutor input) or can pay to receive a high level of experienced tutor support. On the supported version, completion rates were seven times higher than on the traditional mode (although this may be due to user commitment, the payment of a fee, or the effects of extra support), but attainment levels for completing users were very similar for both groups. Uptake of the supported mode was low (only 30 users) and fixed-time hangout sessions were not well used.

Related papers focus on the same MOOC on the eLDA platform, Computing for Teachers. They explore learners' strategies for self-regulated learning, their expectations and motivations, and their levels of participation.

See also: (Sinclair, Boyatt, Foss, & Rocks, 2014)

See also: (Onah, Sinclair, Boyatt, & Foss, 2014)

See also: (Onah & Sinclair, 2015b)

See also: (Onah & Sinclair, 2015d)

See also: (Onah, Sinclair, Pang, & Jantjies, 2016)

See also: (Onah & Sinclair, 2016b)

See also: (Onah & Sinclair, 2016c)

See also: (Onah & Sinclair, 2016d)

Different disciplines

MOOCs cover an increasing range of subject areas. The majority of papers in this section focus on MOOCs in different fields of health and medicine, while others cover mathematics, chemistry, computer programming, social innovation, English and digital humanities.

Massive open online courses on health and medicine: review

(Liyaganawardena & Williams, 2014)

<http://bit.ly/2ehoLTj>

University of Reading

MOOC platforms: 30 different MOOC platforms

This paper is a review of health and medicine-related MOOCs offered by various MOOC platforms in the year 2013. Ninety-eight MOOCs were identified, of which 57 were hosted on the Coursera platform. The John Hopkins University offered the largest number of MOOCs in this area (12). Three MOOCs were offered by developing countries (China, West Indies, and Saudi Arabia). Verified certificates were offered by 14 MOOCs, while three others offered other professional recognition.

Facing forward: the importance of massive open online courses (MOOCs) to nurse education

(Parkinson, 2014a)

<http://bit.ly/2g4J7SW>

University of Liverpool: Abstract only

MOOC platform: not applicable

This conference paper deals with MOOCs, their relevance to nursing and their potential application to nurse education. Online interaction on a large-scale, international basis could lead to greater understanding, cooperation and sharing of experience. Groups of students within nursing who could benefit from MOOCs include potential nurses, existing nurses with continuing professional development needs, care assistants and overseas nurses coming to the UK to work.

Similar work is reported in (Parkinson, 2014b)

The integration of an anatomy massive open online course (MOOC) into a medical anatomy curriculum

(Swinerton, Morris, Hotchkiss, & Pickering, 2016)

<http://eprints.whiterose.ac.uk/101094/>

University of Leeds: abstract only

MOOC platform: FutureLearn

This paper explores the impact of integrating an anatomy MOOC within the anatomy curriculum of a Year 1 medical degree programme. The course was used to supplement existing teaching in order to support the students' consolidation and revision. Analysis of student feedback indicates a high level of usage. Although the video-based resources and quizzes were greatly appreciated as learning tools, significant evidence suggests the students did not engage with the discussion forums. Furthermore, a significant majority of students did not want the MOOC to replace existing teaching.

Is there anybody out there? The design and delivery of a nursing MOOC

(Parkinson, 2016)

<http://bit.ly/2gmlUwP>

University of Liverpool: Abstract only

MOOC platform: FutureLearn

This conference paper reports the experience of designing and delivering a four-week nursing MOOC, 'The Impact of Nursing', to an international online audience of 3300. Within the MOOC, experts in the field of nursing share their expertise.

The course has proved to be an opportunity to learn from and share knowledge with a global community of like-minded individuals. Content explores the strong historical links between nursing, healthcare and Liverpool; particularly nurse education and public health.

Discover Dentistry: encouraging wider participation in dentistry using a massive open online course (MOOC)

(Stokes, Towers, Jinks, & Symington)

<http://eprints.whiterose.ac.uk/90811/>

University of Sheffield

MOOC platform: FutureLearn

This journal paper reports a study of participants and perceptions of a FutureLearn MOOC. The MOOC recruited a substantially younger cohort that is the norm (46% were under 25, whereas 16% is the average across courses). Survey data show that learners considering taking dentistry at degree level engaged with this course. The MOOC was mentioned in just under 10% of applications to a programme at the University. Learners were typically either potential dentistry students or older learners who were professionals in the area, including dental technicians or practice managers.

Recommendations

- The design of MOOCs in vocational and professional subjects should provide an introduction for potential students as well as support for continuing learners who are working in the area.

Does social learning increase engagement in online courses for healthcare professionals?

(Rodrigues & Player, 2016)

<http://goo.gl/nXLaSO>

University of East Anglia

MOOC platform: FutureLearn

This poster reports on a short MOOC that was designed to provide technology-enhanced learning to clinical supervisors. Analysis of survey data, engagement data and learner comments showed that social learning added a new dimension to the MOOC.

Educating healthcare professionals in antimicrobial stewardship: can online-learning solutions help?

(Rocha-Pereira, Lafferty, & Nathwani, 2015)

<http://bit.ly/2gyNuJf>

University of Dundee

MOOC platform: not applicable

Short paper that provides a table of potential advantages and disadvantages of e-learning, specifically MOOCs. The paper has a discipline-specific perspective.

Teaching programming to beginners in a massive open online course

(Liyaganawardena, Lundqvist, Micallef, & Williams, 2014)

<http://bit.ly/2fWxoZ5>

University of Reading

MOOC platform: FutureLearn

This conference paper details the design and implementation of a MOOC about designing mobile games that was offered by the University of Reading in 2013. The authors note a number of challenges including: Internet access, English proficiency, level of digital literacy, trolling in forums, effective support by educators and low completion rates. Despite these problems, feedback from people completing the course pointed to positive learning outcomes.

Online vs face-to-face engagement of computing teachers for their professional development needs

(Sentance & Humphreys, 2015)

<http://goo.gl/T67kl9>

King's College London
MOOC platform: not applicable

This journal paper explores teacher training and professional development for computing teachers. Although MOOCs were used, a survey of 900 teachers revealed a preference for face-to-face learning opportunities.

Mathematical massive open online courses (MOOCs): report of a panel at the 2014 ICM

(Davenport, 2014)

<http://goo.gl/gRh5Ne>

University of Bath
MOOC platform: not applicable

This paper provides a detailed report of a panel discussion focused on mathematical MOOCs. It contains the initial panel brief, a summary of statements by the panel, the question-and-answer session and some conclusions. Common themes were assessment, intellectual property, infrastructure and how to make use of the strengths of both MOOCs and face-to-face education.

Teaching a chemistry MOOC with a virtual laboratory: lessons learned from an introductory physical chemistry course

(O'Malley, Agger, & Anderson, 2015)

<http://bit.ly/2e5HJfX>

The University of Manchester
MOOC platform: Coursera

This journal paper describes students' experiences of using a MOOC in introductory physical chemistry. Students conducted experimental measurements using a virtual laboratory and used video and simulations. The most popular activity was watching the video lectures. Students enrolled primarily to learn about an interesting topic.

SOLE meets MOOC: designing infrastructure for online self-organised learning with a social mission

(Celina, Kharuffa, Preston, Comber, & Olivier, 2016)

<http://bit.ly/2jVJAdJ>

Newcastle University
MOOC platform: custom-designed website and social media

This conference paper presents the design, deployment and evaluation of three configurations of an online learning activity for would-be

social innovators and activists, with the aim of understanding the factors that are critical to the design of an infrastructure to support such communities of learners. This research was inspired and motivated by the example of self-organised learning environments (SOLEs) and builds upon the experiences of early connectivist MOOCs. The three configurations were used to deliver three pilot courses on the topic of Sustainable Development, in partnership with United World Colleges. The primary design goals were to enable activist empowerment, self-organised learning, and the creation of social bonds to facilitate a lasting and self-sufficient international activist community.

Recommendations

These recommendations are made in the context of activist learning.

- Learning infrastructure should minimise distractions that do not support design objectives. In order to do this: organise the resources, enable creative expression in tasks, automate mundane tasks, support scale and sustainability, and focus on learning
- Learning infrastructure should be structured around community rather than content and should focus on the development of lasting collaborations and the enablement of impact. In order to do this: layer community engagement, surface student presence and reinforce community leaders
- In order to support self-organisation, tackle technology problems upfront, and make negotiation of learning a habit. The platform should surface and reward innovation and customisation in order to inspire others to experiment

The changing role and importance of ESP in Asia

(Anthony, 2015)

<http://goo.gl/rDv8MB>

Lancaster University
MOOC platform: not applicable

This journal paper draws on existing research to introduce the potential of MOOCs for English for Specific Purposes (ESP) in Asia.

Reflections on the development and implementation of an introductory MOOC for DH methodologies

(Mahony, Hauswedell, & Tiedau, 2016)

<http://goo.gl/6YjLe2>

University College London: abstract only
MOOC platform: FutureLearn

Since 2011, the University has offered a Masters in Digital Humanities (DH). External funding for the creation of more open teaching resources was used to set up an introductory, postgraduate-level MOOC on FutureLearn. This conference paper reflects on what was learned from the process of designing and delivering the MOOC. It also reflects on how the experience of direct student involvement can be fed back into campus-based modules. Employing graduate students provided them with experience of developing and delivering teaching and learning resources and integrating research into their training.

MOOCs around the world

As the focus in this report is on research from FutureLearn partners in UK universities, the spread of research on MOOCs in different countries is limited. Publications by FutureLearn partners outside the UK are outside the scope of this study, but cover this area in much more detail.

Exploring the relevancy of massive open online courses (MOOCs): a Caribbean university approach

(Dyer, 2014)

<http://bit.ly/2gpKTBg>

University of Liverpool: abstract and introduction only
MOOC platform: not applicable

This journal paper considers MOOCs as a new digital content frontier, their relevance to Caribbean Higher Education institutions and the challenges that universities face as MOOCs become more prevalent. The paper also provides insights into potential strategies for adoption of MOOCs within the Caribbean university system.

Investigating the impact of integration MOOCs into Saudi women's higher education

(Almutairi & White, 2015)

<http://eprints.soton.ac.uk/377357/>

University of Southampton
MOOC platform: not applicable

This conference paper proposes a study that will examine the impact of integrating MOOC elements into taught courses within Saudi women's higher education. The Saudi higher education system is gender-segregated and information and communication technology are used in women's universities to offer remote interaction between female students and male lecturers. While video conferencing, closed-circuit television and online learning platforms can provide remote access to lectures, they fail to provide the rich learning experiences Saudi women require. Participation in MOOCs might be able to enhance interaction and achieve a high level of participation.

Sustainability

Once the initial excitement has worn off, universities and educators need to think seriously about why they run MOOCs and how to go about doing so in the long term. A particular concern is the development of a business model that brings benefits to the university in return for investment of time and resources. The papers in this section consider different models and explore how different universities have approached the problem of sustainability.

Mapping five O's for reaping benefits from massive open online courses

(Nkuyubwatsi, 2014d)

<http://hdl.handle.net/2381/29002>

University of Leicester
MOOC platform: not applicable

This journal paper argues for greater alignment between MOOCs and other forms of learning. It discusses how governments, accreditation bodies, Higher Education institutions, academics and students in under-resourced settings can maximise benefits from the MOOC model. Such alignment could enable MOOCs and others modes of learning

to open up Higher Education to those around the world who are currently excluded.

Fostering collaborative investment in Massive Open Online Courses (MOOCs)

(Nkuyubwatsi, 2014c)

<http://hdl.handle.net/2381/33442>

University of Leicester

MOOC platform: not applicable

This conference paper deals with collaborative investment and effort in MOOCs (in a European context). It argues that Europe has a competitive advantage that would position it at the forefront of the MOOC market if collaborative investment in these courses were promoted. The paper identifies a need to combine five forms of resource for sustainable models: political, financial, technological, pedagogical and heutagogical. It proposes a framework for shared benefits that builds on these categories.

Massive open online courses and sustainability

(Liyanagunawardena, Lundqvist, & Williams, 2015a)

<http://centaur.reading.ac.uk/40069/>

University of Reading: abstract only

MOOC platforms: various

This conference paper discusses possible business models for MOOCs, their advantages and disadvantages. Business models that are discussed include Freemium, sponsorship, grants, donations, merchandise, sale of supplementary material, selective advertising, data sharing and follow-on events. Though these models all offer possible ways of generating revenue for MOOCs, some are more problematic than others. Nevertheless, unless appropriate business models are identified, the sustainability of MOOCs will remain problematic.

Exploring stakeholder perspectives on the development of MOOCs in higher education – a case study of the University of Southampton

(White, 2014)

<http://eprints.soton.ac.uk/377160/>

University of Southampton

MOOC platform: FutureLearn

This Masters dissertation explores motivations behind MOOC creation and implementation at the University of Southampton from the perspective of

internal stakeholders. The results confirm previous research that identified a reputation-building aim underlying MOOC development. The study also shows that stakeholders feel the institutional process behind MOOC development can be exploited to achieve changes in educational practices. The thesis concludes that MOOCs are primarily perceived as a dynamic for internal change and external engagement, rather than as a means of pursuing the objectives of open education and open access.

Challenges in the creation, development and implementation of MOOCs

(Sánchez-Vera, León Urrutia, & Davis, 2015)

<http://eprints.soton.ac.uk/374068/>

University of Southampton

MOOC platform: FutureLearn

Massive is one of the features of MOOCs that differentiate them from other e-learning experiences. This journal paper analyses the advantages and disadvantages of the massive aspect of MOOCs, and narrates the experience of creating a MOOC on Web Science, developed at the University of Southampton in autumn 2013 using the FutureLearn platform. The experience gained from the decisions that were made and the work process that was developed for the creation and implementation of a specific MOOC are shared. Challenges involved in running a MOOC related to course design, platform use and course facilitation are also discussed.

First time MOOC provider: reflections from a research-intensive university in the UK

(Morris, Livesey, & Elston, 2014)

<http://eprints.whiterose.ac.uk/81488/>

University of Leeds

MOOC platform: FutureLearn

This conference paper describes the institutional approach to producing and delivering FutureLearn MOOCs at the University of Leeds. The relative rapidity of the process from conception to course delivery is contrasted with other activities in Higher Education. Modified governance processes were put in place to ensure high quality. These were modelled on standard processes but run in parallel to them. A FutureLearn Education Committee was established at a cross-institutional level to ensure consistency across faculties and ensure oversight.

The University also set up advisory groups on pedagogy and creative production of materials.

Emergent models of massive open online courses: an exploration of sustainable practices for MOOC institutions in the context of the launch of MOOCs at the University of Edinburgh

(Teplechuk, 2013)

<http://hdl.handle.net/1842/7536>

University of Edinburgh

MOOC platform: not applicable

This MBA dissertation explores the groups interested in providing and teaching MOOCs. It finds that instructors often require more resources and time to create and run MOOCs than they are allocated. There is an apparent reliance on enthusiasm from instructors and this could easily diminish. Because of this, many business models for MOOCs are weak and deemed unsustainable by instructors. Some instructors are motivated by the potential of MOOCs to increase their reputation.

Recommendations

- Reconsider how time and resources are allocated to MOOC production and presentation
- Consider how involvement with MOOCs can be used to enhance the reputation of academics, academic departments or the university as a whole.

Appendix 1: MOOC priority areas identified in previous report

The report 'MOOCs: What the OU Research Tells Us' was published in May 2016. It identified ten priority areas for MOOC development at the OU. These are listed below.

1. Influence the direction of open education globally

There is a powerful story to be told around global education. The OU needs to construct a distinct narrative in order

to be able to influence the direction of open education effectively.

2. Develop and accredit learning journeys

Take an active role in constructing and accrediting learning journeys, making use of 'soft certification' such as badging, and include this work in the OU business strategy.

3. Extend the relationship between learners and the OU

Build learner communities that maintain engagement with the OU over time, reducing the gap between students and alumni, and enabling people who have studied together to continue their conversations, sharing experience as they put their learning into practice.

4. Make effective use of learning design

Use learning design as a way to set out and describe the intent in learning material, making use of the many possibilities for MOOC design that the OU and its FLAN partners have already explored, so that it is possible to make judgements about what works and to make interventions with the help of learning analytics.

5. Make use of effective distance learning pedagogies

Pay attention to interaction between students, tutors and material; provide structured tasks to guide learners; offer motivating videos and broadcasts; ensure that teaching material is carefully crafted.

6. Widen participation

Ensure that no elements of learning design unnecessarily exclude people on the grounds of disability, age or location, and engage actively with the challenges that exclude learners due to disability and disadvantage. Any MOOC platform used by the University should be compliant with accessibility standards, and should take into account the possible accessibility needs of both educators and learners.

7. Offer well-designed assessment

Include constructive feedback to students, feed forward, and recognition of achievements.

8. Pay attention to quality assurance

Set quality levels, work in teams, test before your learners do, allow feedback after release and pay attention to external quality assurance frameworks.

9. Pay attention to privacy and ethics

Develop a coherent approach to consent, which accounts for the social science discoveries about how people make decisions about personal data; recognise that people can engage in privacy self management only selectively; develop more substantive privacy rules.

10. Expand the benefits of learning from OU MOOCs

In a time when degrees are presented in terms of career financial return for the individual, align MOOCs with other benefits of learning, such as health, social relationships and participation.

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