

MOOCS IN EUROPE: A LITERATURE REVIEW

PREAMBLE

“MOOCS in Europe: A Literature Review” is an integrated part of the Exploitation work package of the HOME project: Higher education Online: MOOCs the European way. It has been carried out in order to compare the results from the HOME project with the ongoing European and International discussions on MOOCs.

This literature review seeks to evaluate the current state of knowledge, perspectives and the potential future for MOOCs within a Pan-European setting. It provides an overview of currently perceived value concepts from a wide reaching assortment of up to date research and then explores three interlinked themes.

The first theme explores the overall added value concept MOOCs could be thought of supplying and visits the challenge of developing a more precise definition for how they can be considered disruptive innovations and drivers for change. This theme is explored within these first two sections: DISRUPTIVE INNOVATIONS AND DRIVERS FOR CHANGE; CATEGORIES OF ADDED VALUE.

The second theme, in the section entitled PEDAGOGICAL DISTINCTIONS AND COMMONALITIES BETWEEN DIFFERENCES, examines the role of retention and tensions around learner participation, scale in learning (massiveness), educating educators, digital literacies and social models of networked learning as a backdrop to the pedagogical discussion.

The third theme develops a wider discussion about measures of success, including business models, diversifying recruitment, improving quality, reputation enhancement, new financial opportunities, the attraction of the best learners etc. Here, the overriding question is “can individual institutions reach their full potential without embracing widening access (openness) and engagement through open education. Indeed without such a commitment would higher education institutions be able to make the cultural and institutional changes needed for them to realize their full potential- to be able to live up to the greater purpose of supporting "values like openness, equity, quality and diversity" (Goals of HOME application). These themes are explored within the section entitled PANORAMA OF LONGE RANGE VISIONS.

Lastly, in the concluding remarks, the discussion about the importance of developing a sustainable open knowledge network to serve as scaffolding to drive the research agenda and for informing policy incentives for wider civic engagement is discussed.

It is noted that whilst much of the accessible research is on micro level, their implications are far reaching: as we develop insight into how individual institutions grapple with the issues of openness, massiveness, collaboration and partnerships, we should continue to extend our notions of how further provisions of access to materials and shared supportive services can enhance European wide competence development and our sense of how this can deepen a commitment to equity, quality and diversity.

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DISRUPTIVE INNOVATIONS AND DRIVERS FOR CHANGE

The results of the Porto Conference, which are summed up in the “Porto Declaration on European MOOCs” (Jansen, D 2015) highlight the need for embracing opportunities to open up education in a manner consistent with European values of equity, inclusion and social justice, and to increase life-long learning and social mobility.

The paper highlights that there is no international consensus on the scope of MOOC definition - whilst MOOCs are seen as a *disruptive force and an important driver for change*, this paper observes that *MOOCs remain relatively poorly defined[1] and they should not all be assumed to confer similar benefits*.

Furthermore, in lieu of the fact that MOOC initiatives and their perceived value are continuously and rapidly evolving, the paper points out that efforts to direct and shape MOOC initiatives must involve a Pan-European response (involving the European Commission and individual member governments) to explore opportunities to provide *scale in learning opportunities, open educational resource creation, The principle of ‘openness’*.

It is also noted that the *threats that MOOCs pose to the traditional educational system need further analysis and public debate.* ” (Jansen, D 2015, p.1)

What are the drivers in Europe?

So exactly what opportunities do MOOCs present that would be considered drivers for change within a European setting?

The outcomes of the recent report, Institutional MOOC strategies in Europe, points to reasons European institutions see for offering MOOCs. Whilst in US the primary objective for using MOOCs is to increase institution visibility and to drive student recruitment, in Europe, although increasing institution visibility weighs just as highly, driving student recruitment is low down in the list of priorities. In contrast, for European institutions, providing flexible learning opportunities is seen equally as paramount to increasing visibility. Flexible learning is therefore seen as an important goal and driver for change. It would be interesting to visit the discourse surrounding it.

Whilst the Institutional MOOC strategies in Europe: Status report based on a mapping survey conducted in October-December 2014 (Jansen, D. and Schuwer, R. 2015) does not explicitly expand upon what is meant by *flexible learning*, it does through a network of contextual associations allude to online education and innovation, to education *in a flexible way that meets the needs of today’s learners for an increasingly complex world*.

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Other research indicates that the term is about accessing education in a way that is responsive to pace, place and/or mode of delivery. This can include distance or blended learning and using technology to provide remote or online study:

The term flexible learning was introduced as a unifying term, signifying the types of education or parts of the education where there is a distance in time and/or space between the teacher and the student, and where two-way communication and use of technology had been established
(Kjeldstad, B. et al 2014, p.21)

With regard to driving change, MOOCS in Europe are not seen according to EUA as being a catalyst for any major upheavals. Rather, they are seen as contributing to existing education and being accommodated by campus education that already has provisions for flexible learning.

A notable progression in the use of integrating MOOCs with existing campus education can be seen to incorporate flexible learning services, sometimes with credits:

Current MOOCs are more integrated with established flexible learning services and campus education, and in many instances yield results in the form of credits
(Kjeldstad, B. et al 2014)

This trend of incorporating delivery of flexible learning through technology has the added benefits of promoting digital literacies and social models of networked learning for both on campus and distance education:

The development of flexible education methods at universities and university colleges is about to become more closely integrated with the development of a more extensive use of technology in campus education. Gradually, it will be difficult to separate the various education programmes from each other. Findings from Norwegian Opening Universities' monitor study "Digital status 2011", indicate that students see advantages in flexibility and use of digital tools and media in a larger context, and not just in those studies which are defined as more traditionally flexible or distance education. The students appreciate the general flexibility provided by the technology to vary education methods and place of study. (Kjeldstad, B. et al 2014, page 22)

What comes across from much of the research in European MOOCs is the need for personalised, flexible learning paths, that are greatly influenced by learner expectations and engagement. This flexibility should further, be enabled through elastic mechanisms that allow for emergent pedagogies for scaling up and down. What is more, though community-based social learning is encouraged in many MOOCs and is at the forefront of what is seen as the newest models in peer to peer instruction, including small group learning and team assessment, the place and visibility of the teacher remain of central importance. (Dillenbourg, P., 2014; White, B., 2013; Bayne, S., 2014; Kjeldstad, B. 2014)

If the role of the teacher is still seen as vitally important, present MOOCs that allow for peer-peer evaluation, invite the question of whether peer assessment does contribute to better learning outcomes:

There is less knowledge as to whether there would be a similar correlation between peer assessment and

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teacher assessment in MOOCs, and whether the peer assessment would contribute to better learning outcomes.

(Kjeldstad, B. et al 2014, page 56)

This is one of perhaps many emergent research questions that we can already glean, that are needing to be taken seriously as part of the ongoing discourse going forward.

Promises of disruptive technologies pathing future directions

The Perspectives Workshop on “Massive Open Online Courses: Current State and Perspectives”, in which twenty-three leading researchers and practitioners from informatics and pedagogical sciences presented and discussed current experiences and future directions, challenges, and visions for the influence of MOOCs on university teaching and learning, point out that MOOCs have a

... uniquely powerful combination of classical digital teaching tools (videos, audios, graphics or slides), individualized tools for acquiring and validating knowledge, and appropriate use of dedicated social networks makes them a new and powerful means of accessing knowledge and education. (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014)

The promise of MOOCS providing disruptive innovation and their perceived ability to bring about change is evident – they provide a means through which personalised flexible learning can be structured, and through which collaborative social learning is made possible. Rethinking in learning and teaching on a meta level is required:

However, MOOCs represent a new level of engagement between these communities because of their scale, their links to economic and production systems in higher education, and the conversations about teaching that they have provoked, some of which may induce radical changes in teaching and learning mechanisms. The consequences on transmission of culture and educational content, and on society as a whole, will be deep. (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014)

The definitions of added value are already perceived as being *reputation enhancement, new financial opportunities*, the attraction of the *best learners*:

Similarly, we believe modern universities must embrace the disruptive technology of MOOCs as vigorously as European Renaissance universities embraced printing to enhance and cement their intellectual leadership. Like the printing press, MOOCs provide not only new financial opportunities, but new ways to enhance reputation. They can help attract the best learners and faculty, provide them with modern learning environments, and in so doing, contribute to the success of both learners and institutions. These characteristics will make MOOCs an essential component of success and visibility in today's higher education. (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 25)

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Quintessentially, looking to the future, the researchers from The Perspectives Workshop emphasise the importance of being open to new educational modalities, markets and opportunities which will arise, as opposed to concentrating on the perceived potential of existing technologies.

This perspective of as yet unforeseen opportunities, particularly with regard to the pedagogical aspect, which is seen as being subject to negotiation and as having an emergent property, is echoed in The pedagogy of the Massive Open Online Course: the UK view. (Bayne, S. and Ross, J., 2014). However, the paper points out that education is a *complex system*, and that *MOOCs cannot replace existing universities in the same way as iTunes replaced CDs in the music industry.* (Bayne, S. and Ross, J., 2014, page 18).

What MOOCs can do, however, is to take up a place in a new emergent space where digital innovations broach and prompt connections among students on and off campus in collaborative digital spaces:

Campuses may have to rethink facilities in light of the increasing role of personal devices such as smartphones and tablets in and out of class, the greater importance of social learning and interaction (Dillenbourg, P., Fox, A., Kirchner, C., Mitchell, J., and Wirsing, M, 2014, page 8)

Given that the potential added value of institutions is interdependent with the conditions of their surroundings, there is reason to believe there is a need for strengthening their student and student/instructor led networks onsite and digitally.

Indeed, investment in quality teaching and in the social dynamics of complimentary online and offline peer/peer and peer/ instructor interactions not only boosts on-campus higher education, but can also play a leading role in catalysing and facilitating the collaborations needed to address problems of attrition in larger scale MOOCs, which by their scale are facilitating a commitment to openness and universal access, but which, through their size, are in danger of estranging large numbers of learners:

openness should, however, be accompanied by initiatives through which more learners could achieve a MOOC and obtain credits, while keeping both the current policy of universal access and the level of expectation on final outcomes. These initiatives could explore richer individual support, social dynamics such as meet-up groups, analytics for drop-out prediction, increased time flexibility, and so on. In general, we hypothesize that a strong investment in the quality of teaching will contribute to lower attrition; we want learners to feel that teachers are there to help them navigate difficult learning processes. (Dillenbourg, P., Fox, A., Kirchner, C., Mitchell, J., and Wirsing, M, 2014, page 12)

What we can also determine is that there is a shift from knowledge content to pedagogy, from teaching to learning and that technologies for delivering content are now varied (BOOCs, SPOCs, POOCs, DOCCs) and can be restructured according to instructors' individual preferences. (Bayne, S. and Ross, J., The pedagogy of the Massive Open Online Course: the UK view, Edinburgh University, 2014, page 57). These tailor made MOOC offshoots are winning their way into campuses as carefully architected communities of cognitive and social knowledge. Guiding and mentoring of students is however of vital importance as already noted, and this in a complex process of adaptation and appropriation of various MOOC structures as *designed objects*. (Bayne, S. and Ross, J., 2014)

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CATEGORIES OF ADDED VALUE

The Perspectives Workshop (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014) put forward key findings and specific recommendations for eight positions identified within these three categories: *the integration of MOOCs within university education, quality assurance and measures of success, and policies for access and privacy.*

Integration of MOOCS into University education

With regard to university education, it is apparent that students' are in today's digitally connected world, able to access a wealth of online learning materials that shape their aspirations for how they see added value in teacher roles. Teachers are no longer the sole providers of *content* oriented skills and the sources of knowledge. Rather, they must rethink their roles to become *context creators*:

Instructors present their personal views on the content based on domain expertise and puts them into perspective with examples, applications, analogies or anything else they deem useful. Lecturers question the content's assumptions and perspectives, helping learners evaluate alternative explanations of content and thereby guiding them in applying the material (the third step in Bloom's taxonomy). The role of contextualization is especially important across disciplines: a course on "building user-friendly and secure databases" requires interweaving expertise in databases, human-computer interaction, software engineering, and security.

(Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 7)

Rethinking long established modes of teacher/ student interaction, must necessarily include the tailored combination of having a flexible teaching staff with MOOC-like "self-service" resources - this would mean that on campus education could supplement content heavy instructor resources with MOOCs, whilst leveraging the best of both online and offline worlds for content delivery, teaching, curricula structure and peer engagement.

This restructuring of course elements into more-scalable and less-scalable components will leave instructors more time to conduct interaction-intensive learning activities such as small-group discussions and design projects. (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 7)

SPOCs (Small Private Online Courses) which are smaller type MOOCs, that are aimed at supporting classroom teaching, are particularly useful for enabling informed class discussions that involve problem solving and active learning among students, as they are better prepared, after having used the online materials to then participate more actively in class.

(Dillenbourg,P., 2014; White, B., 2013; Bayne, S., 2014; Kjeldstad, B. 2014)

Controversial Discussions

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The debate surrounding MOOCs remains controversial. Low retention rates is possibly the biggest thorn in its side (Clow, 2013; Lewin, 2013). However, much is yet not understood with regard to this issue, and in particular, the dynamics of online communities:

“students have a much greater effect on the attitudes of other students than do faculty members, considering them the primary agents of socialization in this type of academic environment (Bean 1985). Also, future work should look into the interactions between the individual and the academic and social systems. In particular, researchers should closely study individual student goals (e.g. importance of successfully completing the course), attributes (e.g. ability), educational background and academic performance (e.g. academic major, grade-point average, and academic attainments), family background (e.g. social status attributes), faculty contact and interaction (e.g. type and frequency of contact), as well as environmental factors (e.g. finances, employment rates). “ (Adamopoulos, 2013, page15)

What has transpired is the suggestion that course characteristics (e.g. estimated difficulty, workload, duration, whether there is automated grading, etc.)

“are important determinants of students' satisfaction and suggest useful guidelines for course design. For instance, MOOCs in general should have a specific instructor-based timetable, but for the most difficult courses students should be allowed to follow their own pace “ (Adamopoulos, 2013, page16)

Dialogue as the mechanism for retaining ideas and holding on to students

The potential implications for higher education, with regard to pedagogical enhancements rest upon our understandings of MOOC affordances. We are at a stage where our understanding of the xMOOC/cMOOC distinctions lend themselves to different educational applications:

There are researchers who argue that the xMOOCs might be better suited for studying a wide range of knowledge that can be learned through repetitive practice, while the cMOOCs enable learners to obtain "higher order creative skills" (Grünewald, Meinel, Totschnig, & Willems, 2013). Thus, these two pedagogical types shouldn't be treated or evaluated in the same way (Daniel, 2012). (Soffer, T., & Cohen A, 2015)

Central to perpetuating the discussion about the usefulness of MOOCs, and in particular, as a strategy for combating student retention, is the dimension of facilitating social collaboration:

Both types of MOOCs emphasize dialogue as an important element in the learning process. Almost every MOOC actively encourages dialogue and discussion among course participants. Furthermore, dialogue is actually perceived to be the primary mechanism for maintaining connections between different ideas, which are the base upon which knowledge is developed (Ravenscroft, 2011.) (Soffer, T., & Cohen A, 2015)

We need to consider this - are there implications on our understanding of success based on retention and dropout rates, if we continue to hold to old paradigms of conceptualising education? Should we in any way continue to view MOOCs under this older paradigm, knowing that they offer a new and disruptive potential?

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So far it seems, that the overarching somewhat unwritten argument has been to homogenise MOOCs and traditional educational offers into the same category to be subjected to somewhat similar critique mechanisms. As Yang et al (2014) put it:

Current research on attrition in MOOCs (Koller et al., 2013; Jordan, 2013) has focused heavily on summative measures rather than on the question of how to create a more socially conducive environment.

This insistency to look at MOOCs with metrics of dropout rates, has left behind a need to understand the inner workings of social interactions, especially of bonds between students that provide a pattern for emerging social structures that power an as yet not fully understood motivational context that defies generic characterisation.

Stewart (2013) points out that that:

[w]e insist on thinking about educational ventures in institutional terms' even when those are "disruptions" to institutionalized education.

Koller et al (2013) write: *is retention even the right metric by which to measure success in a MOOC?*

In fact it would seem that we should be concentrating on how students engage within these environments and the combined institutional efforts put in to create a conducive study environment as well as the more unpredictable effect of the social network.

According to Yang et al (2014): *social support exchanged through online discussions has been identified as a significant factor leading to decreased attrition in other types of online communities (e.g., Wang, Kraut, & Levine, 2012)*

In their study the researchers set out to work with the hypothesis:

that if we can understand better how the affordances for social interaction in MOOCs are functioning currently, we may be able to obtain insights into ways in which we can design more socially conducive MOOCs that will draw in a larger proportion of students, provide them with needed social support, and ultimately reduce attrition

Their work has yielded valuable insights into social emergence and the cumulative effect of networks of discussion forum sub communities online. Their findings can be summed up in this statement:

The lesson we learn from the qualitative analysis presented in this paper is that students are vulnerable to dropout when they have not yet found a personal connection between their interests and goals and the specific content provided by the course. Mentors present within the discussions to coach students to find such personal connections might serve to keep students motivated until they have made it past initial confusions and have settled more comfortably into the course. On average, it is the more motivated students who participate in the discussions at all. However, the analysis presented here reveals that even among those students, we can identify ones that are vulnerable. Real time analysis of the texts could enable triggering interventions, such as alerting a human mentor of an opportunity to step in and provide support to a student who is motivated, but nevertheless does not possess quite enough of what it takes to make it in

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the course without support. Real time analysis of discussions for triggering supportive interventions that lead to increased learning are more common in the field of computer supported collaborative learning (Kumar & Rosé, 2011; Adamson et al., 2014), and such approaches could potentially be adapted for use in a MOOC context (Yang et al., 2014)

Echoing this, research into students' participation in sub communities and links to their peers' activity, reveals social emergence and dropout patterns that have a degree of predictability:

As students participate in the MOOC, they begin to form virtual cohorts of students who are moving at a similar pace, are at a similar place in the course, and are engaging with the material in similar ways. If students begin to see others in their cohort leaving, they may find the environment less supportive and engaging and may be more likely to drop out in turn (Rose et al 2014)

Understanding the dynamics of engagement for design, retention, grading options

We should try to understand the dynamics of engagement -to understand what drives *significant interaction* in online networks, to come forward to best practice design and intervention strategies that can afford optimal learning.

From a paper by Oxford University that investigates behaviour patterns among students in online networks, particularly at group level interactions in MOOC forums, but points out the structural limitations of large-scale crowd-based learning, we read :

In theory, the openness and scale of MOOCs can promote iterative dialogue that facilitates group cognition and knowledge construction.... however what is not known in fact, "is the degree to which MOOCs in practice allow for deep and meaningful learning (Gillani, et al 2014)

We learn in fact that - *Despite a growing body of research, many questions relating to the characteristics of group interactions and dialogue in these courses have largely been ignored (Gillani, N., et al, 2014, page 2)*

Understanding what comprises *significant interactions* and how these can be facilitated/scaffolded, particularly at group level, is seemingly, pivotal to understanding learning processes. For just as learning can be scaffolded, we can also view vulnerabilities within a network. Interestingly this relates to the networks created autonomously by learners themselves, and not necessarily to the discussion spaces made available within the confines of the prescribed system- as many students may prefer to take conversations over into facebook or other social media sites.

When two large scale business courses, having in excess of 70,000 and 90, 000 students, were studied on Coursera in Spring and Autumn of 2013, researchers discovered that "more than 2 out of 3 connections in the study groups sub-forum were considered "insignificant" . This is because conversations were taken elsewhere. It was the learners themselves that grew the networks and who created significant connections: *That indeed the "critical set" of learners is responsible for potential information flow in a communication network (Gillani, N., et al, 2014, page 4)*

Here we can derive a relationship between iterative dialogue and knowledge construction as being the critical set of nodes (learners) that support these activities. Furthermore - *different incentives for participation promoted different levels of inclusiveness and engagement among learners...This would in part*

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be intervention from instructors: how the forums are leveraged by course staff to encourage participation. (Gillani, N., et al, 2014, page 4)

We can also observe that understanding peer activity is not only interesting for learning outcomes, but for student retention and even for grading students:

Students were encouraged to use the forums to discuss weekly business cases on existing companies such as Google, Apple, Disney, etc. In FOBS-1, students were not evaluated on their performance in the forums; in FOBS-2, 8% of students' final scores was derived from their forum participation as a function of the total number of "upvotes" they received on their posts or comments. (Gillani, N., et al, 2014, page 7)

Homing in on Peer cohorts- their different learning styles and community forms

There is evidence to suggest that large scale crowd based learning, when analysed in depth, exhibits a degree of heterogeneity among learners, who because of their differences in learning styles, geographic regions etc, find their way into sub groups quite randomly, that suit in one way or other, their preferences:

Recent work on a subset of this data employed qualitative content analysis – combined with community detection schemes from machine learning – to infer latent learner communities according to the content of their forum posts. Interestingly, for the Cases and Final Projects sub-forums, the inferred communities had statistically significant differences in the geographic and prior educational experiences of constituent learners, as well as their final course performance and overall engagement in the discussion forums. (Gillani, N., et al, 2014, page 6)

Another study, also by Oxford University, that looks at communication within networks, particularly at differing characteristics within emerging communities of learners and how interaction profiles relate to learner characteristics, is Communication Communities in MOOCs (Gillani, N., et al, Communication Communities in MOOCs, 2014). This study offers additional insights into the business strategy MOOC offered on the Coursera platform in Spring 2013.

Two of the sub-forums aimed at promoting learner engagement and interactions were analysed to better understand the ways in which students engage with one another and construct knowledge. Learner demographics, course outcomes, broader forum behaviours and types of posts for each of its constituent learners were analysed.

What emerged within these forums, were distinct types of communities. In the first part of the course, these sub communities were given these distinctions by researchers: committed crowd engagers, discussion initiators, strategists, and individualists. For each group these differences were noted: the degree to which posts featuring higher-order learning were posted, how much the students read and posted in the forums, the percentage of students completing the course and possible hypotheses of why this was the case. What transpired from these analyses were a number of things including:

To what degree the different categories of students were seeking support and opportunities for collaboration, to what degree they were interested in receiving formal acknowledgement or recognition for

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passing the course as opposed to exchanging ideas with others, how interested they were in discussing their projects with peers, how strategic they were in using the sub forums for attaining necessary information only etc. These findings point to:

distinctively different interaction patterns that characterize the groups in each sub-forum indicate that learners have very different needs and expectations of the discussion forums, and these needs must be considered in order to truly understand how to support learning in massive open online courses (Gillani, N., et al, Communication Communities in MOOCs, 2014, page 8)

This research does not seem to suggest a singular prescriptive design style over others, but rather it furnishes us with insight into the multiple ways learners can and do create their own networks and find their own communities that have similar collective behaviours. Furthermore, it establishes an argument for an open design that would allow for a spectrum of networking possibilities:

Participants can, to a large extent, choose for themselves how much they wish to use the forums to construct knowledge together, i.e. adopting a more socio-cultural approach to learning, or use the forums as a way to react on their own ideas, more in-line with cognitive and social constructivist approach to learning (Stahl, 2006). (Gillani, N., et al, Communication Communities in MOOCs, 2014, page 8)

Informing design – learners’ reasons for study and how this is lived out in practice

Diverse cohorts of learners have diverse learning styles and preferences for MOOC affordances.

However research that would better inform development to enhance the learning experience and more precisely - *how quality is understood by learners, what leads people to complete courses, and the role of social learning are currently under-researched aspects of the new courses.* (Kjeldstad, B. et al 2014, page 6).

Understanding the underlying motivation for taking a MOOC, learners’ perception of quality and how the role of social learning play in, are timely research questions taken up by The Higher Education Academy.

In the HEA report entitled *Liberating Learning: Experiences of MOOCs* (Kjeldstad, B. et al 2015), which is the third report in a series of reports, the first two being: *The Pedagogy of the Massive Open Online Course: the UK View* (HEA 2013), and *Engaged Learning in MOOCs: a Study Using the UK Engagement Survey* (HEA 2014), we are provided with substantive feedback on experiences of different learners and discover that there are two primary reasons for study: personal enjoyment, and learning for work or professional reasons. These reasons for study are juxtaposed against whether learners study alone, or participate strongly in social interaction:

The study reported here sought in-depth accounts of learning on a MOOC from ten people who completed one of the University of Southampton’s first two such courses during 2014. Its goal is to better understand their motivations for studying in this way, and the learning opportunities and problems they encountered. (Kjeldstad, B. et al 2014, page 6)

The interviews which were conducted with ten people, currently resident in UK, who completed one of Southampton’s MOOCs during 2014, resulted in these four categories of findings regarding learners’ motivations for taking MOOCs:

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1. Flexible, fascinating and free

This theme captures the motivations of interviewees. Many saw themselves as 'finishers', either squeezing MOOC learning into busy lives or structuring free time around demanding self-imposed learning schedules. A high level of mental stimulation, high quality learning resources, and being able to work flexibly and at their own pace were key attractive features of MOOCs. Scope to experiment with new topics, knowing there were no financial costs or commitments to being assessed, also emerged as a major attraction of MOOC learning.

2. Feeling part of something

The social learning generated by certain activities – notably the discussion forum, reading or posting questions and replies, sharing resources, and to a lesser degree using social media – all contributed to a sense of being part of a community of learners. This extended to those who only participated in passive ways, as a great deal of gratitude and appreciation was expressed to more active contributors. Many talked of the global community, being very inspired by conversations with people studying the same subjects from very different geographical and political environments. The enthusiasm and online presence of educators was found to be engaging and interesting.

3. Ways of learning

This theme describes in detailed ways interviewees' organisation and use of various learning resources. It presents very different views of the place of video, video transcripts, journal articles and quizzes. Progressing through MOOCs in a step-by-step way, rather than 'dipping in and out', comes across as the preferred approach as it allows people to 'keep up' and converse with peers about weekly topics. Although quizzes were not universally popular, interviewees' ideas and suggestions for helpful activities are offered.

4. A bit of proof?

Interviewees were sceptical about the various ways in which their learning through MOOCs could be 'verified'. They also revealed a cost sensitivity when asked whether they were prepared to purchase additional resources or further accredited tests. Their personal motivations for MOOC study did not generally include progressing in higher education. Just one was considering purchasing a certificate of completion (Kjeldstad, B. et al 2014, page 7)

This type of qualitative research that reports on the learner experience can help us build deeper reflective knowledge to identify what matters for successful engaged learning. This power of engagement is further attested to in the research document *Online Learning at Research-Intensive Universities* which introduces interests in the concept of co-enquirers, which relates to social interaction among participants in crowd sourced driven frameworks (using the power of crowds to add value in terms of digital content for research or community collections) :

Crowd-sourcing initiatives are an area where RIUs could provide a significant lead, and where people have a real opportunity to participate as co-enquirers as opposed to learners. This will also give some universities the opportunity more extensively to use their library and museum collections as forms of public engagement and educational enhancement for co enquiry (Mapstone, Buitendijk and Wiberg 2014, page 14)

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Of course, research universities have an inherent motivation to pursue on campus teaching innovations. These 3 various motivations for having MOOCs are presented:

On-campus teaching innovations can take place in direct conjunction with MOOCs or related types of courses offered by the university. For instance, professors who develop and implement MOOCs can involve their regular students in a variety of tasks from testing the teaching materials to supervising peer grading to regulating online discussions and safeguarding their academic level. Secondly, MOOCs can become research driven virtual learning environments for on-campus students when the MOOCs are being used for research purposes. Students can for instance be involved in research into the learning outcomes of MOOCs or in implementing surveys among the learners, on topics related to the MOOC and in analysing the survey outcomes for research. Thirdly, MOOC-platforms can be used to run Small Private Online Courses (SPOCs). Those can involve on-campus students only, or a mix of on-campus and off-campus students. Especially in topics that would benefit from an international classroom, this form of learning can create an enhanced experience for the regular students and for the teacher. (Mapstone, Buitendijk and Wiberg 2014, page 6)

Closing Gaps and maintaining learning excellence

Much of the controversial discussion revolves around the ways in which MOOCs do/do not reduce costs, enable mass access to education and if they do in fact promote learning excellence. Often these are seen as two mutually exclusive entities. However, it is interesting to note that Tel Aviv University have offered MOOCs to the worldwide public and simultaneously incorporated these as part of their academic curriculum, engaging the claim that closing gaps and achieving learning excellence can be complementarily supportive.

TAU has offered three academic MOOCs, taught in English, in the fields of archeology, history and science. The courses have been made available through Coursera and have been offered as *a public service and as future training for the information society*. Interestingly, TAU has also opened these courses to TAU undergraduate students to take these MOOCs as part of their current curriculum and receive academic credit for them upon completion. TAU students were required to take their final exam on campus, in addition to completing the assignments and the official online course exam.

The added value these MOOCs have had on TAU students, as well as suggestions for improvement can be seen as having value for other universities wishing to integrate MOOCs as part of their academic curriculum:

mentioned the valuable convenience of flexible learning – any place and any time, according to their schedule. In addition, several suggestions for improvement were made, such as receiving specific guidelines regarding course assignments and especially the final test, adding subtitles to videos to assist with any language issues, and addressing the imbalance between the difficulty level of the assignments and quizzes versus the final exam (Soffer, T., & Cohen A, 2015)

Contrastingly, The Tel Aviv pilot study points out that although fewer universities are allowing their students to take the MOOCs as part of their academic curriculum (Eaton, 2012; ACE, 2012; Masterson, 2013) the ones that are, are:

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increasingly exploring ways to incorporate MOOCs as part of their academic curriculum in different models (Firmin, Schiorring, Whitmer, Willett, Collins & Sujitparapitaya, 2014; Taneja & Goel, 2014; Joseph & Nath, 2013) (Soffer, T., & Cohen A, 2015)

Another very interesting and similar model, is the case of the HOOC—a hybrid open online course—project at the University of Pittsburgh. Here, students are proactively encouraged to interact with online students on the wider MOOC platform:

The online students can listen to an hour of each three-hour seminar and participate in the discussion by posting comments on Twitter. And each doctoral students enrolled in the campus class is required to prepare a lesson in the course and teach it to the online students.

Associate professor of communication, Gordon Mitchell, comments on the dynamic:

It's a symbiotic evolution for two courses that are happening at the same time.
(Negrea, S. 2014)

Quality assurance and measures of success

This section will explore:

- quality criteria for MOOCs
- standards for measuring participation
- issues pertaining to return on investment

Quality criteria for MOOCs

The MOOC style, whether cMOOC or xMOOC greatly determines what value is placed upon learner cohort quality. One might expect a cMOOC environment to boast greater peer-to-peer interaction and thus as a learner, one might rightly expect a favourable environment for producing such qualitative interactions. Likewise, the quality the the learner cohort itself, would come into play. This and other considerations were listed by the Dagstuhl Perspectives Workshop as determining for the overall quality of MOOCs:

- 1. Learning effectiveness, fulfilment of learning objectives*
- 2. Engagement of learners*
- 3. Professionalism of preparation and execution*
- 4. Quality of the learner cohort*

(Dillenbourg,P., 2014; White, B., 2013; Bayne, S., 2014; Kjeldstad, B. 2014)

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Findings point to a tendency to pay less attention to point 1 (learning objectives), as emphasis is placed on the preparation of overpolished videos etc.

These failings have been identified for poor quality in MOOCs:

1. *Video/content quality problems: poor presentation, poor or inappropriate material, poor quizzes*
2. *MOOC not based on any pedagogical underpinning*
3. *MOOC not clear or accurate about learning goals and outcomes*
4. *Technical problems: poor sound, unreadable slides, poor video quality or delivery, audio and video out of sync, learner-facing technology that collapses at large scale or is a poor fit to the teaching material*

A Gates Foundation program review found these to be the most common areas of weakness in MOOCs:

the most common areas of weakness were institutional responsibilities that are quite different in a MOOC than in a residential course, such as articulation of course support services and of policies regarding accessibility issues.

A further challenge that was listed as having relevance for learner expectations was the *mixture of for-credit and non-for-credit learners in MOOCs – two cohorts with different sets of expectations.*

(Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 15)

EFQUEL (The European Foundation for Quality in eLearning) which provides criteria for assessing quality of online learning has also MOOCs (<http://efquel.org>).

Standards for measuring participation and pedagogies of engagement

Misleading and counterproductive indicators

Completion rates remain to be a contentious issue for MOOCs, however research efforts have in the past few years, begun to look more at the impact and potential of moocs and understand how they create value. In other words how to educate at scale. Engagement, usage patterns, variation in registrant background and intention, are all of interest.

A collaboration between the HarvardX Research Committee at Harvard University and the Office of Digital Learning at MIT, studying the differences and commonalities among 17 massive open online courses offered on the edX platform in 2012 and 2013, has come forward to some interesting findings. Among them are these observations:

-Course certification rates are misleading and counterproductive indicators of the impact and potential of open online courses... For open online courses that support large-scale enrollment, there is no forced tradeoff between numbers of certified and noncertified registrants—both numbers can increase freely by design. In these circumstances, focusing on certification rates alone penalizes desirable activities like

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browsing and exploring courses, which open online courses are generally designed to support...Pressure to increase certification rates may decrease the impact of open online courses, by encouraging instructors and administrators to suppress or restrict registration, lower certification standards, deemphasize recruitment of target subpopulations, or disregard interventions that may disproportionately increase numbers of non-certified registrants over certified registrants

-Course exploration and certification may benefit from synchronous course schedules and the cohorts that they build.

-New metrics, far beyond grades and course certification, are necessary to capture the diverse usage patterns in the data (Ho, A. D. et al, 2014)

Dr Keith Devlin, Mathematician at Stanford University invites us to rethink our approach to the evaluation of MOOCs as learning programmes:

...applying the traditional metrics of higher education to MOOCs is entirely misleading. MOOCs are a very different kind of educational package, and they need different metrics -- metrics that we do not yet know how to construct (Devlin, K., 2013)

Indeed, it would seem that methodologies and metrics that focus on learning as an event, extend back to formal classroom-based training or time-capsuled formats, where learning is greatly regarded as a commodity with a start and end. However, MOOCs present us with a rather different service focused framework replete with the dynamics of complex communication among peers. This poses a challenge not only for capturing perceived value in such an intangible world of online social negotiation, but also with regard to measuring and improving engagement.

An approach for charting the path to devise an appropriate response to evaluation is uppermost in the minds of many researchers these days.

A recent report from The Open University, UK, from 2015, entitled “Examining engagement: analysing learner subpopulations in massive open online courses (MOOCs)” which has studied patterns of engagement in massive learning environments, notes that these patterns are greatly influenced by decisions about pedagogy. Evaluation in this regard is clearly seen as a process to improve engagement, where the continuous shaping of that engagement is reliant upon course context, course design and course pedagogy. The study in this case was of four MOOCs on the FutureLearn platform. These MOOCs employ a social constructivist pedagogy- where knowledge is jointly constructed through conversation.

Seven distinct patterns of engagement or “clusters” were found to be present: *Samplers, Strong Starters, Returners, Mid-way Dropouts, Nearly There, Late Completers and Keen Completers*. These patterns of engagement were found after studying not only the content and assessment within the course’s learning design but also the discussion. The clusters identified were then able to inform a range of strategies for intervention and improvement. (Ferguson, R., and Clow, D., 2015, page 7)

We can engage the claim that understanding and managing patterns of engagement particularly among peer cohorts taking the same course, synchronously, is very relevant. We can further consider the degree

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to which a permeability is possible in the boundaries between asynchronous postings among students at different stages of any given course:

Managing asynchronicity to maintain registrant involvement regardless of enrollment date is an ongoing challenge for instructors and a fertile area for future research (Ho, A. D. et al, 2014, page 3)

In any case it would seem that focusing on completion rates can be misleading and that not every student is attempting to complete a course, but has their own standards for success.

This isn't just about MOOCs, Andrew Ho, an associate professor in Harvard's Graduate School of Education, says. *This is about the democratization of learning: Learners are in control. We are at the beginning of an exciting effort to understand how people learn and how to educate well and effectively at scale.* (MIT Newsoffice, 2014)

Furthering our understanding of intent and course participation pathways

The reasons for course enrollment and what these motivations can predict for ultimate actions, i.e the behaviours of course registrants are interesting to find. Can we depict participant intent? Can we speculate on how to chart course participation pathways? If so, there may be interventions to increase engagement - pedagogical and technological innovations that serve as resources for online, residential, and blended teaching.

These interventions can be evaluated on a wide variety of outcome measures, including student performance, persistence, and participation. Some students register for a MOOC to browse the materials, while others fully commit to completing all course activities. Furthermore, it seems that performance in the early stages of MOOC courses are indicative of the further levels of participation - A study on students' assignment performance and social interaction in the first week of a MOOC course, seems to suggest that *assignment performance in Week 1 is a strong predictor of students' performance at the end of the course. The degree of social integration in the learning community in Week 1 is positively correlated with the achievement of Distinction certificates.* (Jiang, S., et al, 2014).

This paper says about *the existent opportunities for the improvement of online education that Future research should focus on how to increase students' social integration and interaction in the online learning community, as these factors have been shown to influence student participation in MOOCs.*

Indeed, social integration and interaction seem to be pivotal to driving motivation for completing MOOC courses: *Students with external incentive are more likely to complete the course compared to students in general, even in comparison with students who have similar backgrounds.*

Social engagement strengthens learning in the early days of MOOC courses – but do we know how?

What we see in the propensity for the more productive students to exhibit more *externally incentivized* behaviour, particularly in the early days of MOOC courses, and also in the thereafter conclusions regarding intervention, are recommendations for the creation of a set of practices paralleling the collective identity formed and that is built on shared practice - this belonging to a social constructivistic understanding of learning.

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Of current particular interest to many researchers are *reliable early predictors of student dropout and performance in MOOC environments*. This is with a view to providing a *framework for developing scaffolding mechanisms in MOOCs that provide individualized guidance and small-group support, which should significantly increase retention rates*. Indeed the most illuminating metrics are those that in themselves involve students' interest in their peers: *Once scores on a peer assessment were available, they became the best indicators of performance*. (Biswas, G., and Ye, C. 2014).

For instructors, this information can be useful and may incentivise them to focus on promoting group cohesion as an organising principle already in the early part of MOOC courses: *findings suggest that instructors concerned about attrition should consider focusing their efforts on building community and engagement in the early days of a course when attrition is highest*. (Reich, J. 2014).

This said, presently there do not seem to be definitive recipes for course design because the causal factors that do promote student learning are still not completely known:

It does not require trillions of event logs to demonstrate that effort is correlated with achievement. As these are observational findings, the causal linkages between doing more and doing better are unclear. Beyond exhorting students to be more active, there are no practical implications for course design. The next generation of MOOC research needs to adopt a wider range of research designs with greater attention to causal factors promoting student learning (Reich, J. 2015)

To be able to make claims about what students learn, there needs to be more assessments capture multiple dimensions of learning: *Assessments should capture multiple dimensions of learning, from procedural to conceptual*.

And it is not only engagement we need to understand but comparisons across contexts, interventions with experimental design, learning itself: *For MOOC research to advance the science of learning, researchers, course developers, and other stakeholders must advance the field along three trajectories: from studies of engagement to research about learning, from investigations of individual courses to comparisons across contexts, and from a reliance on post hoc analyses to greater use of multidisciplinary, experimental design*. (Reich, J. 2015)

Although we can see a positive relationship between students who engage actively with peers and their learning outcomes, one of the pitfalls before us is to focus on improving engagement in the earlier stages of a MOOC course without fully understanding the consequences for actually learning:

Course developers optimizing for engagement statistics can create pleasurable media experiences that keep students watching without necessarily learning (Reich, J. 2015)

It is therefore of vital importance that, in our efforts to creatively invoke better engagement among students in the early stages of a MOOC course, we do not run counter to our own efforts and sabotage real learning opportunities that may require a more complex approach.

The example of creating pleasurable media experiences may lend logic to the engagement issue, but may not wholly solve the research direction for future possibilities related to productive learning: *Distinguishing*

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between engagement and learning is particularly crucial in voluntary online learning settings, because media that provoke confusion and disequilibrium can be productive for learners (Reich, J. 2015)

Issues pertaining to return on investment

Producing educational outcomes at scale might not be the overriding goal of having a MOOC for many institutions. They may want to operate at a smaller scale level. They may not want to produce MOOCs themselves (*producers*) but to be *consumers* of MOOCs. MOOCS may be seen as vehicles to pursue multiple goals.

A recent report by the Center for Benefit Cost Studies of Education, Columbia University (Hollands, Tirthali D, 2015), offers an exploration of the

goals of institutions creating or adopting MOOCs and how these institutions define effectiveness of their MOOC initiatives.

Empiri was gathered from interview-based perspectives on the costs and benefits of MOOCs as perceived and experienced by 62 institutions in North America, Europe, and China.

Six major goals for MOOC initiatives were identified, among the 29 institutions that were already offering or using MOOCs in some way:

- *Extending the reach of the institution and access to education*
- *Building and maintaining brand*
- *Improving economics by lowering costs or increasing revenues*
- *Improving educational outcomes for both MOOC participants and on-campus students*
- *Innovation in teaching and learning*
- *Conducting research on teaching and learning goals.*

(Hollands, Tirthali D, 2015)

These goals can be compared with the major cost drivers in MOOC production and delivery, which are:

- *Number of faculty members, administrators, and instructional support personnel involved*
- MOOC production teams seldom included fewer than five professionals and, in at least one instance described to us, over 30 people were involved. Faculty members typically reported spending several hundred hours in the production and delivery of a single MOOC.*

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- *Quality of videography; we estimated costs for high quality video production at \$4,300 per hour of finished video, using national average prices.*
- *The nature of the delivery platform*
- *Technical support for participants*
- *Programming for special features such as computer code auto-graders, virtual labs, simulations, or gamification*
- *Analysis of platform data*

Variable costs can be offset over the longer term *by automating functions and substituting instructional support provided by expensive faculty members with less costly teaching assistants, part-time instructors, or peer-to-peer learning and assessment.*

It is clear however, that MOOCs and their derivatives - the various types of blended or hybrid delivery models on-campus, will increasingly be experimented with as educational resources rather than as stand-alone courses - this is at least the consensus among many of the 83 interviewees, when asked about the future of education (Hollands, Tirthali D, 2015, page 14). This tendency allows institutions to make use of already existing MOOCs to supplement their on campus education.

There is considerable need for models that leverage high-quality online learning platforms while taking into account what professors do best — facilitating inquiry, guiding learners to resources, and imparting wisdom that comes with experience in the field. (Johnson et al 2014)

Interestingly, however, in USA, *only a small percentage of institutions of higher education are actually offering MOOCs* (5% according to Allen & Seaman, 2014)(Hollands, Tirthali D, 2015) And in UK Many prestigious institutions, including Oxford and Cambridge, have declined to use the new platforms (The Economist 2014)

A market for MOOC courses could be inculcated and become financially viable if *credentials of economic value* are put in place and incentivised by the educational system:

if MOOC providers are able to offer participants credentials of economic value (e.g., college or high school credits; verified certificates of accomplishment; virtual badges to certify skills or noncognitive traits), a market will be established for individual courses, which could be extended to a variety of non-degree-based educational experiences. Such a market would greatly benefit from a system for evaluating and accrediting each course or educational experience - one that is trusted by employers, educators, and funding agencies alike, and that reflects a learner's ability to contribute productively to society. If funding agencies subsequently become willing to allow learners to apply financial aid to any such recognized educational experience, the landscape of higher education will be opened to more competition, leading to lower costs. (Hollands, Tirthali D, 2015, page 13)

In Europe there are divided opinions regarding the uptake of accreditation:

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Under rules designed to promote student mobility between EU member-states, students can transfer course credits, at the discretion of universities, in any of the 53 countries that have signed the Lisbon Recognition Convention, “regardless of whether the knowledge, skills and competences were acquired through formal, non-formal or informal learning paths”. The catch is getting European universities to accept MOOC credits, in order to trade them. “Europe will not quickly take to new forms of degree delivery,” predicts Santiago Iñiguez, the president of Spain’s IE university. Others are more optimistic. Hans Klöpper, the managing director of iversity, points out that it is easy for students to assess MOOCs’ quality, since they are open for all to see. Once students start to complete them in large numbers and clamour for recognition, it will be hard for Europe’s universities to resist accrediting the best of them, he believes.(The Economist 2014)

The premise for valuing these different accreditation models is at the basis of *competency based* education - the idea of providing a more flexible approach to learning and degree attainment, which augers in on priorities of offering bundles of educational units that will help one progress toward degrees:

An extension of the shift in focus toward measuring student learning will be the growth of competency-based education. This model allows students to progress toward degrees—outside the typical semester track—by demonstrating mastery of skills and content. (Opidee 2015)

EDUCAUSE defines competency-based education:

Competency-based education (CBE) awards academic credit based on mastery of clearly defined competencies. CBE replaces the conventional model in which time is fixed and learning is variable with a model in which time is variable and the learning is fixed. (Blake, D. 2014)

MOOCs can be seen as lending themselves to this type of learning:

In theory, students can learn in any way that they learn best, including via MOOCs and other open educational resources. Using MOOCs and OER in this way could dramatically reduce the cost of getting an education—perhaps even bringing it down to something reasonable.(Blake, D. 2014)

The article, from 2014 lays out how MOOCs can become providers of *competency based education* and lets us know which large MOOC providers met the criteria for these at that time:

In order for MOOCs to be useful to students in competency-based programs, however, a couple of things would need to change. First, more MOOCs would need to be self-paced and accessible at any time. Currently, of the top MOOC providers only Udacity’s free courses fit this model; Coursera and edX’s courses are scheduled. Second, accrediting agencies will need to figure out how to accredit knowledge instead of seat time (Blake, D. 2014)

An updated look at the field shows how edX in cooperation with Arizona State University are offering credit based courses through MOOCs:

The new partnership between the flagship public university and edX, a MOOC provider, flips the typical process of getting into college on its head.

Students interested in the MOOCs won’t have to apply and be admitted to Arizona State, but can simply register for the courses. Instead of paying up front for tuition and working to make sure the money was well

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spent, the MOOC students decide whether or not to pay to earn credit only after they have received their final grades. (Straumsheim, C. 2015)

The programmes offered through their online platform, the Global Freshman Academy, are to all intents and purposes online, competency-based programs however, these emerging forms of competency-based education, also known as *direct assessment*, are still in their infancy, and have received from their accreditation body a critical stance, questioning the degree to which they live up to: *regular and substantive interaction between students and faculty members.*

Policies for access and privacy

This section will explore:

- issues related to universal access
- negotiating data policies

PEDAGOGICAL DISTINCTIONS AND COMMONALITIES BETWEEN DIFFERENCES

Emergent pedagogies

The paper by HEA - the Higher Education Academy, which is the national body for learning and teaching in higher education in UK, points out that pedagogy is an emergent entity that is subject to negotiation. It reports that we can no longer choose to see MOOCs within a preconceived duality of xMOOCs or cMOOCs, but should think within a broader framework where commonalities between differences are to be found. (Bayne, S. and Ross, J., 2014, page 4; page 8)

Indeed we are reminded that MOOC pedagogy is not *something that can be conveniently categorized* instead, the report shows, it is emergent, diverse, cannot be relegated to simply a binary decoding and is determined by individual institutional preferences:

UK MOOCs have multiple pedagogic forms and intentions, and we can no longer define them as a single 'transformative' entity. Broad-brush descriptions of MOOC pedagogy in terms of a cMOOC/xMOOC binary are no longer representative or particularly useful. A more nuanced approach to institutional thinking around MOOCs is now needed: one which takes account of an analysis of MOOC pedagogy at a micro level of individual course design (Bayne, S. and Ross, J., 2014, page 8)

and

MOOC pedagogy is not embedded in MOOC platforms, but is negotiated and emergent. Multiple social and material influences converge when MOOC pedagogy is enacted: teacher preferences and beliefs, disciplinary influences, patterns of learner expectation and engagement, and other contextual factors such as institutional teaching culture or the desire to generate analytics. We need to give greater attention to MOOC pedagogy as a socio-material and discipline-informed issue. (Bayne, S. and Ross, J., 2014, page 8)

Likewise, the manifesto from Dagstuhl Perspectives Workshop reiterates the finding that MOOCs cannot be identified purely as an xMOOC or as a cMOOC:

Most current MOOCs lie between these extremes, with some structure (weekly content in the form of video and quizzes) and some important social interactions (discussions, peer-review of work, and so on) (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 5)

A relevant finding with regard to emergent pedagogy are the ways in which peer interactions among an educated learner base can contribute to engaging learning:

The absence of the "sage on the stage" will open new ways to foster teacher and learner commitment. Campuses should focus less on conveying content-oriented skills and more on social/professional skills, such as collaborative work and perspective-broadening activities, to complement independent study and discovery

(Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 5)

In this emerging setting, it will become increasingly important for institutions to devise pedagogical strategies that are consistent with their social and professional networking assets:

Campuses should also capitalize on their social and professional networking benefits, teaching skills that are less content-oriented and more crosscutting such as teamwork and collaboration

(Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 7)

Retention and tensions around learner participation

Although this topic has been addressed in part, further up, in it is relevant to address how the concept of *retention* and *learner participation* should be reconceptualised for MOOCs.

Dillenbourg *et al* make a convincing case for why MOOCS in higher education are uniquely positioned to engage an educated learner base:

Interestingly, instructor guidance around inquiry-based use of existing materials combined with teamwork and collaboration are the underlying format for another kind of education many universities already practice: graduate research. While undergraduates would be mainly exploring an existing body of knowledge rather than discovering new knowledge, it is possible that the undergraduate educational process could become more like graduate research and less like the unidirectional presentation of information that dominates much of undergraduate education today. (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014)

There is much debate regarding MOOC dropout rates, however much of the current research is now challenging the view, if indeed dropout rates is the real problem and proposing that, instead, a rethinking of what it means to be a student should be examined:

DeBoer and others have argued, however, that the concept of “retention” should be reconceptualized for MOOCs [6], given the very different risk/benefit profile that MOOCs offer relative to traditional credit-bearing courses that charge a fee or tuition (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 5):

This required rethinking of criteria for learner participation is echoed in various research papers:

There has been a vigorous debate as to whether the high dropout rate experienced by MOOCs is the result of a design failure or a failure to filter out underqualified, uncommitted students. Gary Matkins, Dean, Continuing Education and Distance Learning at UC Irvine, thinks that MOOCs are being criticized for what they are not rather than being judged for what they actually are. The preoccupation with course completion rates has obscured more important qualitative issues – such as learning and retention rates among serious learners. (De Souza, G. et al 2013)

Indeed, learner motivations which are linked to peer-peer conversations/networking and to real world problem solving, are emerging as the key motivational drivers for student engagement levels:

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and their Gillani's (2013) analysis of patterns of participation on a business strategy MOOC on the (xMOOC) Coursera platform found that most of the 4,337 discussion forum participants in the MOOC received below a 50% score on the MOOC, suggesting that 'most discussion forum participants are more interested in connecting with others to talk about issues with real-world significance and implications than they are in being formally recognized for their work.' (Bayne, S. and Ross, J., 2014, page 22)

Scale

On the pedagogical side, The Perspectives Workshop paper ((Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page ..) suggests the dynamic regrouping of learners to match learning styles and paces. Furthermore, it is noted that the range of pedagogies for xMOOCs is limited primarily to delivery of content and computer-based assessment and that although the larger the network, the more opportunities there are for direct learner-to-learner communication there are significant challenges for the large scale preparation, monitoring, grouping, surveying, directing, and coaching of learners within such MOOCs.

It is further implied that smaller scale MOOCs would lend themselves more to group activities oriented to joint production of artifacts like essays or design documents in project-based learning.

However, the paper puts forward the possibility of allowing from borrowings from smaller scale MOOCs, if not at least to entertain the conceptions and constructions of 21st century competencies within larger scale MOOCs:

In the diversity of pedagogical methods, those that are difficult to conduct at scale tend to be those that scaffold high order thinking skills or competencies such as creativity, critical thinking, collaboration skills, and scientific rigour. The importance of these skills explains why we care about pedagogical diversity at scale and leads us to the following recommendation expressed as a research question: How can we create a broad range of effective pedagogies at massive scale, and thereby efficiently contribute to achieving 21st century competencies. (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 10).

Whilst current thinking seems to support the belief that degree level education cannot be facilitated through MOOCs, the debate on whether this is true or not does not seem to be a simple thumbs-up or thumbs down proposition. It encompasses a variety of questions, yet unanswered, and also, according to Dillenbourg requires further research:

a degree usually covers higher-order learning outcomes that are rarely addressed in MOOCs, such as creativity, sense of rigour, critical analytic skills, skills of synthesis, reflection, ability to identify problems, social skills, and so on. We recommend research on MOOC activities that support the development of these high-level skills. Replacing exams by projects or even capstone projects are examples of such activities (Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 12)

This is a research question that neither the Porto Declaration (Jansen, D., 2015) nor the Institutional MOOC strategies in Europe report touch upon. (Jansen, D. and Schuwer, R. 2015)

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Educating educators

One of the priority objectives that was put forward during perspectives explored at the World Academy's Forum on Global Higher Education conducted at the University of California at Berkeley on October 2-3, 2013, was the:

expanding accessibility to make quality higher education available to a much larger proportion of the population in both economically advanced and developing countries (De Souza, G. et al 2013)

MOOCs and hybrid versions of MOOCs were seen as providing structures that -

can make the best quality course content accessible globally, including in places where a shortage of qualified teachers and textbooks deprives many students of access to reliable knowledge. (De Souza, G. et al 2013)

SPOCS (Small Private Online Courses) lend themselves to introducing advanced materials in a flipped classroom model. These could become extremely useful for providing teaching instructors in underdeveloped nations with the necessary framework for internal skills development:

SPOC (Small Private Online Course) targeted not at learners but at other instructors becoming involved with a course. These materials could familiarize staff with particular course topics, give guidance on resolving common learner problems, and so on. By exploiting the ability to create such materials, it becomes possible to train new strata of teaching staff that further leverage the effectiveness of the lead instructor, potentially allowing us to educate more learners with a sublinear increase in instructor resources.

(Dillenbourg,P., Fox,A., Kirchner,C., Mitchell,J.,and Wirsing,M, 2014, page 8)

PANORAMA OF LONGE RANGE VISIONS

While local conditions naturally vary, there was a broad agreement on seven priority objectives: expanding accessibility to make quality higher education available to a much larger proportion of the population in both economically advanced and developing countries; raising completion rates of students who enroll in college; bringing down the cost of education, which is an increasing burden to students everywhere; improving relevance to eliminate the mismatch between the knowledge imparted and the skills required by the labor force to achieve full employment; enhancing quality of education; applying innovative technologies for delivering content, interaction with students, evaluation, assessment and accreditation; and reformulating the content of courses and curriculum to more effectively address social needs. (De Souza, G. et al 2013)

Regarding policy initiatives for academic accreditation

Presently there is no systematic recognition of MOOC studies at higher education institutions in the UK, according to "Universities UK" (2013) and neither are there top down efforts to encourage academic recognition in US, but there are singular localised initiatives at various academic institutions (Eaton, 2012; ACE, 2012; Masterson, 2013).

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