

## MOOCs, SPOCs, DOCCs and other bugs by Frank Naert

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### Abstract

*Written from the perspective of an individual lecturer at a European university with no particular know-how in e-learning and online educative devices, this paper aims to understand the MOOC phenomenon that, for a couple of years, has hovered over the field of higher education. A tentative answer is given to the question whether MOOCs will disrupt higher education. It is indeed feared in many corners that MOOCs will hurt non-top universities in favour of the Ivy League institutions by replacing average lectures with the stars of the university celestial sphere. This paper argues that, especially in the European context, such a disruption is highly unlikely. More likely is that MOOCs will evolve into one of the many education tools in higher education.*

*The point is, then, how this evolution can be turned into an advantage. It is argued that having a considerable degree of inter-institutional cooperation would be an asset. Until now, most MOOCs have been developed by single institutions, but it would be an asset for the European Higher Education Area (EHEA) for European-style MOOCs to be developed by European networks of universities (and eventually other partners). Explicit support for this effort should be offered by the Erasmus+ programme.*

**Keywords:** MOOC; massive open online course; higher education; European dimension

### 1. Introduction

This position paper was written from the viewpoint of an average higher education economics lecturer – with no more than an average know-how of electronic learning devices – who is confronted with a phenomenon that in some corners is being coined a revolution, i.e. the advent of the Massive Open Online Courses or MOOCs. As far as MOOCs constitute a revolution, it has been suggested that MOOCs are threatening the position of the average higher education lecturer by replacing their lectures with electronic lectures supplied by the star professors from the best universities in the world (Gregory 2012; Kalman 2014).

Simultaneously, the universities of these average lecturers would become superfluous. In this vision, MOOCs function as factors of disruptive innovation that destroys existing systems and replaces them with a different technology. MOOCs could then cater for the well-known Schumpeterian ‘creative destruction’.

It is not simple to formulate an original opinion on MOOCs. The concept is still in the making, leaving much room for speculation on the future role of MOOCs. Despite the limited number of facts, much has been written about MOOCs (see Bonk a.o. 2015 for a recent comprehensive collection on the subject). The Department for Business Innovation & Skills (2013) lists more than 100 publications in

the few years since the MOOC concept appeared. This allows us to act in an eclectic way and browse our way through the literature, picking up what appeals to us in our position of average lecturers in higher education.

The position taken in this paper is that the predicted disruption and destruction will not happen and that MOOCs will be incorporated into the traditional university system, especially in Europe. How the traditional system will incorporate the MOOCs idea will determine which contribution the MOOCs can make towards a more modern style of higher education. We shall therefore make a suggestion on how to augment the value added by MOOCs.

## **2. What is a MOOC?**

A MOOC seems to be a hard-to-define concept with many variants and derivatives. The terminology includes cMOOC, xMOOC, SPOC, DOCC, SMOOC (Hollands & Thirtally 2014, p. 25; definitions will follow).

Starting by dissecting the parts that compose the term, a MOOC should be a 'massive' event comprising numbers of participants that significantly exceed the capacity of the classical university auditorium. Tens, even hundreds of thousands, of course members can be involved. Notably, the notion of 'massive' in such numbers implies the near absence of instructor-student interaction.

The element 'open' cannot be unambiguously determined (Bates 2015). Sometimes it means a free course, other times it means the absence of registration. In both senses, MOOCs stand apart from traditional higher education, which for this matter includes e-learning and online education. The distinction becomes blurred, however, when a fee is required for a MOOC, e.g. in order to obtain a credit. 'Open' also sometimes refers to the access to course material, in the sense that legal, open licensing of course material allows anyone to view, use, download and eventually mix it with own content.

The element 'online' is another discerning feature of the MOOC. The medium for the course is the Internet. However, the difference from traditional online courses offered by traditional universities and open universities is unclear. In addition, divergences can be identified in the sense that, sometimes, offline elements are incorporated into MOOCs, while in other instances, MOOCs are incorporated into regular courses or in blended learning situations.

The element 'course' concerns the binding nature of attending the course. There is a well-defined start and end date of the course, and the frequency of the modules is given (usually one or two weekly). Within this timeframe the course participants are free to choose their moments of study.

The relative clarity of this definition is immediately inhibited by the contrast – present from the start of the MOOC – between cMOOCs and xMOOCs. The c in cMOOC stands for 'connectivist' and was an essential feature of one of the first MOOCs, namely the Siemens and Downs course of 2008 at the University of Manitoba in Canada. The objective of this course was 'for people to experience what it means to be part of a social, technical system of learning where the teacher's voice is not an essential hub but, instead, a node in an overall network' (Siemens as cited by Hollands & Thirtally 2014, p. 25). The network of students was central in this approach, while the role of the teacher remained minimalistic. Through the network course, members could participate by contributing and reacting to each other.

The xMOOC was another early MOOC. Here, the x stood for extra enforcement of the m from massive, pointing at the exponential numbers of course members. The first Stanford MOOCs were the model xMOOCs.

Derived from the MOOC are courses such as SPOCs: small private online courses. The SPOC is not open, but closed, and the MOOC material is integrated in a normal course. A DOCC is a distributed open collaborative course that involves students and teachers from different institutions. It is built upon a network of 'participants situated in diverse institutional contexts, within diverse material, geographic, and national settings, and who embody and perform diverse identities (as teachers, as students, as media-makers, as activists, as trainers, as members of various publics, for example)' (DOCC 2014).

SMOC stands for synchronous massive online course and is characterized by 'life' lectures on the Internet.

Furthermore, there is the MOUC: the massive Open University course (Mulder 2013). The MOUC seems to be the European online higher education community's adaptation of the American MOOC. Equally large numbers of students are envisaged. The course is open in the sense of freedom of choice of moment, speed and location. Different, however, is that the MOUC is paid for and leads to credits (ECTS in fact).

What this terminological abundance shows is that 'the' MOOC does not exist. The MOOC concept is constantly evolving and takes such multiple forms that it becomes difficult to discern from traditional forms of higher education, including online education. It also shows that the thinking about MOOCs should not be restricted by the original ingredients of the concept.

The same fluidity is found when considering the suppliers of MOOCs. In the pioneering period, American companies were involved such as Coursera, edX and Udacity. Some were linked with universities, but always with a distinct profile. With the exception of edX, these companies are for profit. The European reaction came mainly since 2012 and shows a varied image of initiatives, partly driven by university institutions, regular as well as open ones (e.g. OpenUpEd, Futurelearn in UK, MyriadaX in Spain), partly by extra-university institutions (e.g. iversity in Germany).

For completeness, we should also mention that, elsewhere in the world, all kinds of MOOC initiatives are underway. The MOOCs Directory ([http://www.moocs.co/Home\\_Page.html](http://www.moocs.co/Home_Page.html)) reports a worldwide increase of the number of MOOCs from 615 in June 2013 up to 2,625 in June 2014.<sup>11</sup>

### **3. Hype, revolution or extra spice?**

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<sup>11</sup> What catches the eye from a Flemish perspective is the almost complete absence of Flemish higher education institutions in the MOOC world. The occasional exception notwithstanding, Flemish higher education lacks representation and fails to offer any MOOCs. Other institutions are also practically absent. The European MOOCs Scoreboard, made up by the European Commission, reports 742 European MOOCs as of 1 August 2014. Of these, 10 are Belgian, and of these 10, only one can be situated in Flanders. This can be an expression of animosity towards a new threat, but it can also embody an attitude of wait and see in order to do some cherry picking when the evolution becomes clear. As Voss (2013, p. 7) asserts in general: 'And often their tendency is to examine this as an academic experiment—to study it and wait for outcomes'.

A meaningful quote on MOOCs comes from Joseph Ugoretz (CUNY). According to him, we are ‘...at a place where almost any kind of online learning is called a MOOC, or if it's not called a MOOC, no one pays any attention to it...’ (as cited in Hollands & Thirtally 2014, p. 2). In other words, ‘MOOC mania’ is abundant. The question then is, whether MOOCs are just hype, a temporary phenomenon that will pass after a certain while. After all, the Internet has existed for a couple of decennia and online teaching is nothing new, but their impact on education remains limited. Thus, why would MOOCs make such a difference? Will MOOCs cause a real revolution in higher education? ‘Is this time different?’, as the chief information officers (CIOs) of the members of the Committee on Institutional Cooperation (CIC), a consortium of Big Ten universities plus the University of Chicago stated at the end of 2012. Their answer was affirmative: ‘The effect on residential universities relative to previous experiences and events in the arena will be profound and long-term’ (BIS 2013).

Carey (2012) postulated that before this decade is out:

- ‘The “parallel universe” of an online-age education will reach a point of sophistication and credibility where the degrees granted—or whatever new method is invented to mean “evidence of your skills and knowledge”—will be accepted and taken seriously by employers.
- Political pressure will continue to grow for credits earned in low-cost MOOCs to be transferable to traditional colleges.
- Profit margins that colleges have enjoyed in providing more-traditional education will shrink.
- Colleges with strong brand names and other sources of revenue will emerge stronger than ever, but everyone else will scramble to survive as vestigial players.’

Another opinion makes the parallel with the music industry: ‘Whatever their faults, MOOCs herald an unstoppable “Napster moment,” which will break the old business model of Higher Education in the same way that the Napster downloading site provoked the collapse of the traditional music industry business based on copyrights’ (BIS 2013, p. 13).

It is clear that, in some quarters, the MOOC is seen as potentially very disruptive. Nevertheless, the viewpoint we want to present in this paper is that MOOCs will not so much cause a revolution in European higher education. Rather, we see the European context evolving into a smooth incorporation of the useful ingredients of the MOOC.

For that matter, I think it is essential to make a distinction between the substitution and income effects of MOOCs. The substitution effect signifies the substitution of the traditional methods of higher education (including open education) by MOOCs. Because of the reasons explained below, we think this effect will remain limited. The income effect stands for the expansion effect of MOOCs on the higher education market. Because of the low cost and easy access to MOOCs, additional market opportunities will be created. Participants from poorer countries, graduates and other (e.g. elderly) people looking to expand their knowledge will add to the traditional higher education customer group of youths between 18 and let us say 30 years.

Our position can then be restated as follows. The substitution effect will remain limited and will evolve into a recuperation effect that will hopefully improve the level of teaching in higher education.

Similarly, a more substantial income effect will hopefully encourage ‘institutions to develop distinctive missions that will include considerations about openness and access for different groups of students’ (Yuan & Powell 2013). The remainder of the paper focuses on the substitution effect, as this is where the impact on the situation of the individual lecturer, our point of departure, is situated.

In order to answer the question whether MOOCs will cause a revolution in higher education, we first have to define what such a revolution would mean. Yuan and Powell (2013) discussed the possible disruptive effect of MOOCs, which can be interpreted as follows: a new technology is developed; this new technology displaces the old business model, leading to the exit of the incumbents.

Using the elements of this definition, we shall now try to argue that MOOCs will not cause such a revolution.

- Do MOOCs constitute a new technology?

As became clear in the analysis of what constitutes a MOOC, the borders with open education and even with traditional education are blurred and vague. The use of electronic learning devices such as Blackboard and Moodle is now widespread. The extra element offered by MOOCs is the software that enables a course to become 'massive'. Nevertheless, it is not yet clear how this can be used to improve education. The comparison is made between a situation in which two of a group of 100 students give the wrong answer to a content related question and the analogous situation in which 2000 of a group of 100,000 students give the wrong answer. Such large numbers should inspire the discovery of where knowledge acquisition is failing and establish how to remedy the problem (cf. example given by Coursera's Daphne Koller in a recent TED-talk ([http://www.ted.com/talks/daphne\\_koller\\_what\\_we\\_re\\_learning\\_from\\_online\\_education?language=en](http://www.ted.com/talks/daphne_koller_what_we_re_learning_from_online_education?language=en))).

In Holland and Tirthali (2014), however, it is convincingly shown that this rich potential is currently not yet exploited because it proves very difficult to transpose the enormous data treasure generated by MOOC platforms into formats fit for analysis.

- Will the old business model be displaced?

The business models behind the suppliers of MOOCs are diverse and their sustainability is questioned (Kalman 2014). The revenue is supposed to come from three categories of sources: sales to institutions of higher education (e.g. access to platforms, assistance with course development), sales of services to private companies (e.g. advertising, job market related services) and sales to students (e.g. fees, payments for credits). In this last case, the 'open' aspect of MOOCs is endangered. It seems that MOOC providers have yet to create a proper business model. The various business models chosen by Coursera, edX, Udacity, etc. do not seem to be viable in the long run. The search for a viable business model seems to be aiming to offer more conventional credited courses (Kolowich 2013). The competitive advantage of MOOC providers vis-à-vis traditional course providers would then lay in the supposed superiority of their software platforms. Rather than ousting the traditional university business model, the so-called new model would be consumed by the old model. Differentiating between MOOCs on the one hand and MOOCs providers on the other, a movement whereby these providers enlarge their supply will be seen. Thereby, the MOOC suppliers can no longer solely be associated with MOOCs, thus leaving MOOCs to transform into one of the many services offered by traditional higher education.

Another problematic aspect of MOOCs is that its large scale is at odds with the desirability of maintaining an element of instructor-student interaction in higher education (Singh 2014). Taking part

in a MOOC is a solitary engagement resulting in a large fall out. Increasing the commitment of the instructor is logically not an area where MOOC providers have an advantage, but rather the traditional institutions.

- Will the incumbents be pushed out?

The evolution sketched under the previous point shows that the traditional suppliers of higher education services, including online versions, will not be pushed out that easily. As the MOOC providers are likely to offer other services, the traditional higher education providers, including those in Europe, will (continue to) be active in developing and offering MOOCs. It seems likely that the established actors will stay established. This image is strengthened by some institutional features of the higher education field, namely by the strong government intervention in the sector and the lobbying power of universities. These features make it hard for the new actors like the MOOC providers to fight universities' monopoly in the granting of degrees. Illustrative of this is that, recently in the US, legislation to grant credits for passing MOOCs has not been passed (California) or only after a long struggle (Florida).

It is to be expected that traditional higher education institutions will embrace MOOCs if they can generate more income and/or reduce costs, but they will fight MOOC providers if these aspects question their degree granting monopoly.

Moreover, it is not only the supply side that needs to be considered, but also the demand side. MOOCs will only be a threat to the traditional institutions if students shift in big numbers from the regular scene to the MOOC scene (cf. the substitution effect). At present, such a shift cannot be observed, and there are no signals that this will happen in the short term. The different profile of MOOC students, the limited success rate and the accompanying large fall out (up to 95% was reported recently) are illustrative of this. A certain reticence to cross over in the opposite direction also seems to exist. Offers by regular universities in Colorado to navigate MOOC students towards credits attracted no interest. 'Meanwhile, several projects aimed at helping MOOC students navigate existing pathways to college credit have attracted little or no interest' (Kolowich 2013).

Thus, our conclusion is that MOOCs will not cause a disruption. As stated by Voss (2013, p. 1): 'MOOCs are just one spice among many online-education spices, and colleges and universities (and faculty members through their pedagogy) will employ many spices to make the perfect academic creation for consumption'. Another strong image is that 'like Russian dolls sitting inside each other, a single course might now be delivered to a large open MOOC audience, to a much smaller number of SPOC students and then down to an even smaller number enrolled at the bricks-and-mortar campus' (Coughlan 2013). MOOCs will serve as educational resources, rather than stand-alone courses, and will target specific audiences.

Kolowich (2013, p. 3) brings a story that very well reflects the direction MOOCs will take in practice:

'Ronald F. Rogers, Chair of the Psychology Department at San Jose State University, co-taught

an introductory statistics course on the Udacity platform this past spring. Nearly 20,000 people from around the globe signed up for the MOOC version of the course. By June, about 3,000 of them had completed the course and earned a certificate from Udacity, according to the professor. But Mr. Rogers was more interested in the 82 students who were taking the online course for credit through San Jose State. For those students, the course was not a MOOC. It was a conventional online course, just taught on the Udacity platform. Their written assignments were graded by hand by a live human being, and they could contact the professor for help. In turn, Mr. Rogers could log in to the platform, see whether individual students seemed to be stuck—and if so, where—and reach out to them’.

This evolution looks at first sight rather disappointing: from a sensational innovation with the potential to bring revolution to higher education to a marginal redirection of higher education. In the next point, however, we shall look for the bright spot in this evolution.

#### **4. Adding a European dimension to MOOCs**

How could the post-MOOC story look in Europe? What are the start and end points of this story?

The starting point is the ‘classic’ MOOC with the following features that distinguish it from traditional education, including online and e-learning higher education:

- an online course on a specific software platform;
- the lectures are videotaped;
- feedback is given at set times through quizzes and exams;
- no personal interaction exists between instructor and student;
- the course has to be taken within a certain timeframe;
- the MOOC does not earn a credit;
- the MOOC is free.

An amalgamated form, adapted by the traditional (online included) institutions of higher education would consist of:

- an online course, videotaped, but with limited access, on the same kind of platform as MOOC;
- feedback, as with MOOCs;
- personal interaction between instructor and student;
- time frame similar to the traditional university semester; deviating frequencies remain possible;
- the course is adapted from a traditional university course;
- payment modalities can differ according to the type of student.

Taken with the rationale developed in the previous point, it should become clear that this process does not constitute a revolution, but rather amounts to a repackaging of existing elements into a new product, hopefully with added value that could occur in various domains. The point is that, a new instrument should effectively contribute to better learning results. Each MOOC variant offers chances to do so, since (part of) the lectures are taped and require only a one-off effort, freeing time to improve

learning results (i.e. through better instructor student interaction and monitored interaction between students). However, this is a general consideration, not only applicable to the European situation.

In the case of Europe, extra salt and pepper can be added to the end product by transforming it into an object of European cooperation. It is a European objective to build an EHEA, eliminating the borders between the member states and allowing students, researchers and professors to freely take advantage of the entire European higher education offer. The considerable amount of work already done and the progress observed in the past couple of decennia (e.g. Bologna, Erasmus programme) could still be supplemented by a Europeanised version of the post-MOOC intended for traditional higher education.

The motives for a European area also apply to the MOOC phenomenon: the fragmentation and the linguistic and cultural diversity are responsible for too much provincialism and duplication. Therefore a collective European response would be welcome (cf. Porto Declaration on European MOOCs, 27 November 2014). The pan-European initiatives concerning MOOCs that are underway, however, almost always amount to the development of a MOOC by a single institution. The European element is usually confined to the marketing of MOOCs through an international website. The problem is that the European element remains absent when it comes to developing uniquely European style MOOCs. If institutions create content together and make it available to others, there is potential for savings. However, if everyone is creating the same thing, the potential for economies of scale is lost. The linguistic diversity in Europe only exacerbates this problem.

Institutional cooperation in developing post-MOOCs is made possible in the Erasmus+ programme under the heading of strategic partnerships. This offers individual teachers the possibility to develop joint post-MOOCs in cooperation with colleagues of foreign institutions. Problematic, however, is that the European programmes are very complicated, especially after recent reforms. Adding to the difficulty is that the EU fails to offer any tools making it feasible for individual teachers, or for international teams of teachers, to develop post-MOOCs. If the EU wants to promote MOOCs, it could envisage the supply of services, directly or indirectly, enabling teachers to concentrate on the essence of the learning process when writing projects to develop post-MOOCs. Offering a platform on which such courses could run, for instance, would add significantly to the ease of writing post-MOOC projects under Erasmus+.

A course developed and shared by various international partners looks an obvious idea, but it is not. Worldwide experience shows that a number of cross-institutional collaborations have already been formed to offer online courses, including MOOCs (Hollands & Thirtally 2014). However, success should not be supposed as the example of Semester Online shows. Semester Online was a US online course pool initiative in favour of developing fully online undergraduate degree programs. During the 2012 media storm surrounding MOOCs, it emerged with a distinctive message, promising small course sizes and live, interactive videoconferencing sessions (Straumsheim 2014). However, before the launch of the pilot, and after intense faculty debate, three of the participating universities withdrew, and the universities and the online provider reached a mutual decision to end the initiative (Straumsheim, 2014). This demonstrates that such collaborations among institutions of higher education are not always easy to negotiate and sustain.

In the European context, the Erasmus+ programme could operate as a lever to launch and continue such inter-institutional cooperation. In the initial stage of the Erasmus programme, the EU supported



the development of networks between institutions of higher education. It could do so again with the specific objective of supporting networks adopting a post-MOOC-concept comprising networks of instructors from a multi-country setting, putting the instructor-student interaction at the fore and offering some kind of technological support for the development of such courses. In doing this the European Union could seize the moment to grab the opportunities offered by MOOCs (Jansen & Schuwer 2015).

## 5. Conclusion

This paper developed the viewpoint that MOOCs will not disrupt the traditional higher education model. MOOCs will, in the first place, create an extra market for higher education where traditional institutions can become active or not. MOOCs will have a much smaller impact than expected by the MOOC pioneers on the core business of higher education, the servicing of their traditional customer base of youths between 18 and 30. Therefore MOOCs will likely serve as a source of inspiration to adapt traditional courses to the modern times. Arguably in Europe, an extra dimension could be added to the MOOC-concept by stressing and supporting inter-institutional multi-country cooperation in the development of student-centred courses. Erasmus+ could be the vehicle for such support.

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