

A Brief Guide To Understanding MOOCs

K Masters

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Abstract

Background: The Massive Open Online Course (MOOC) is an emerging method of online teaching whose application in education, especially medical education, is largely uncharted territory. The successful implementation of MOOCs requires conceptual changes in understanding by instructors and students. Aims: The author presents a brief guide to assist teaching staff in understanding the conceptual changes required by instructors to implement a MOOC successfully. Conclusion: The potential impact on medical education is unknown, but MOOCs cannot be ignored if we wish the impact to be positive.

INTRODUCTION

The Massive Open Online Course (MOOC) is an emerging method of education. Because of its relative novelty, and the fact that some of its theoretical assumptions are still evolving,¹ its applicability across a broad range of fields is untested – its applicability to medical education may be highly contentious. Currently, MOOCs might be considered passing fads, or, at best, on the fringe. It is possible, however, that MOOCs will have an influence on all education in the coming years.

Before implementing a MOOC, it is crucial to understand the concept, and how the MOOC differs from a traditional face-to-face course, and even a “traditional” online course. This brief guide is designed to assist teachers and learners in understanding the concept of a MOOC.

1. UNDERSTAND THE OVERALL CONCEPT OF MOOC

What is a MOOC? “MOOC” is an acronym for “Massive Open Online Course.” The term was first coined as a result of a large online course run by George Siemens and Stephen Downes in 2008.² The structure was inspired by other similar large courses, such as one run by Alec Couros, and the philosophy of connectivism.³⁻⁵ While readers will be familiar with the terms “online” and “course” in the context of education, the other terms in the acronym require explanation.

The “massive” refers primarily to the number of students. (“Massive” may also refer to the scope of the course’s

activities.) For example, a MOOC with 200 students might not be considered “massive.” MOOCs can easily have several thousand students simultaneously engaged in the course. In the future, even this figure may be considered relatively small.

The “open” draws on and develops the concepts originally inspiring Couros’ work.⁴ The software used by staff and students is open-source, registration is open to anyone, the curriculum is open (or loosely structured, and open to change as the course evolves), the sources of information are open, the assessment processes (if they exist) are open, and the learners are open to a range of different learning environments.

2. UNDERSTAND THAT MOOCs ARE A STAGE IN ONLINE EDUCATION EVOLUTION

Although they may seem strange and disorientating, MOOCs appear to be the fourth stage in an evolving process in online education. (Like all models with stages, some individuals will skip stages, or may be involved in more than one stage at a time.) The stages of online learning development can be identified as follows:

Stage 1: The lecturer places notes and presentations into an online repository or file server with a shared drive. The online environment is simply an electronic distribution area, with access through a network, often a Local Area Network (LAN).

Only students registered on the network have access to the

course environment, and they download the material as required. Individual lecturers make their own choices about where and how to host their material. The lecturer is the “sage on the stage.”

This approach was typically used in the 1980s and early 1990s.

Stage 2: The lecturer uses a home-grown system and/or externally-developed Learning Management System (LMS) or Virtual Learning Environment (VLE). (The term LMS will be used in this article). In some instances, lecturers may use external web sites, but almost all activity is centralised on the LMS, in many ways antithetical to the original view of the Web.⁶ Within the LMS, the concentration of activity is still on the lecturers’ notes and presentations, but other tools such as chat rooms, discussion forums and wikis are available. Some learner-learner and learner-instructor online interaction does occur through these tools, but is frequently of little consequence to the course. The quiz and grade book tool show potential.

Only students registered on the course have access to the course environment, usually available through Internet technology. The lecturer is still the “sage on the stage,” but other voices are heard.

This approach is typical of the 1990s.

Stage 3: The LMS remains the centralised teaching and learning environment, but important changes occur in the relative importance of the various tools within the LMS. Most notably, the content area is reduced in importance, and the other tools, especially the discussion forums and chat rooms, are now prominent. Learner-learner and learner-instructor online interaction is common, and important to the course. The quiz and grade book tool become important management tools. Some courses venture into the use of online (even portable) ePortfolios. Other tools, such as wikis and blogs are also of some importance, but the learning model still emphasises a process of content acquisition, learning and testing. The creators of the LMS adapt the LMS to contain more “Web 2.0” tools, but these tools are, by definition, “contained” within the LMS.

Only registered students have access to the tools, although the possibility for establishing publicly-visible links to some material does exist. When the students have “completed” the course, they usually no longer have access to it.^{7,8} The lecturer is now the “guide on the side.”

I would venture that most teachers currently involved in online education are, or aspire to be, at Stage 3.

Stage 4: The MOOC. The composition and operation of the MOOC are explained in more detail below.

3. KNOW THAT THE CENTRE DOES NOT HOLD (IT IS NOT DESIGNED TO HOLD)

In Stage 3, the importance of the content area within the LMS was reduced. In stage 4, the MOOC is decentralised and networked, and the network begins to resemble the patterns of the semantic web envisioned in Web 3.0. In this network, the importance of the entire LMS is reduced to one node in the network; the LMS is used primarily for management tasks (such as registration and learners’ profiles) and hosting of discussion forums.

Most of the student activity happens outside of the LMS, on other nodes of the network, such as in personal blogs, personal portfolios, websites, tweets, uploads into video hosting sites (e.g. YouTube), networking sites and virtual worlds. Students then pass their information, frequently through automatic systems using Tags or RSS feeds, into a system (called an aggregator or curator) that aggregates the information with other information, such as that from the LMS’s discussion forums.

All this information is combined as a series of links and descriptions, and this set of links and descriptions is sent out (usually via email) to the students in a daily newsletter. The newsletter keeps the learners abreast of learner activities in the LMS and elsewhere. The learners access this information, reflect on it, return to their activities, and the process continues.

It is important to understand that, although the course instructors will supply some stimulus material, almost all of the “content” is supplied by the learners themselves.

4. KNOW THAT THE INSTRUCTOR’S ROLE HAS CHANGED

I use the word “instructor” or even “facilitator” with trepidation. From the paragraphs above, it is clear that the role of the instructor has changed. Cormier and Siemens² give more information on the roles of the instructor, which include amplifying, curating, wayfinding, aggregating, filtering (or selecting), modelling, and staying present.

In all of this, the “staying present” is crucial – the instructor should not move from the “guide on the side” to the “absentee landlord”.⁹ In practice, however, instructors will

find themselves playing dual roles of facilitator and student. They may be keeping track of events and discussions, but frequently for purposes of learning.

The instructors may run regular live online sessions (through tools like Elluminate and Wimba), but attendance by learners is optional. Because the learners will be spread around the globe, many will access the online sessions as recorded sessions.

It is unlikely that the instructors will be able to read and interact with all of the learners' contributions. Because they will be observing, the most privileged position an instructor could have is an identified "snoop in the group."

5. KNOW THAT ACTIVE LEARNER PARTICIPATION IS CRUCIAL

Active learner participation is important in most forms of modern education. From the description above, however, it is clear that the course is built upon the learners' participation, and their construction of information. Because there is no set knowledge base, if the learners do not contribute, there will be nothing to learn.

Unlike traditional online participation, as discussed in Item 3 above, much of this participation will happen away from the LMS. (For example, it is quite possible that a learner's blog, or video on YouTube becomes a focus for comments, and might be the chief resource for a component of the course).

6. KNOW THAT THE LEARNERS WILL BE INDEPENDENT, AND FREQUENTLY OUT OF SIGHT.

In addition to accepting that learners are working elsewhere, the instructors need to accept that there will be no follow-up on learners who appear to be absent, or who do not appear to be participating. The instructor trusts that the learners are learning according their own wishes. Experience teaches us that the greater the contribution and participation, the greater the value derived by the individual learner. This level and type of participation, however, is entirely up to that individual learner.

The learners usually work independently, but some may form their own online groups. If they wish to meet off-line (i.e. face-to-face), that is also acceptable.

7. BE PREPARED TO FORGO SET GOALS AND OBJECTIVES THAT "MUST BE MET"

In a MOOC, assessment does not drive learning; learners' own goals drive learning. The learners set their own goals,

based upon their own needs. They work towards those goals. Those goals may change as the course progresses. The course is a process of inquiry, and the level of inquiry is set by the individual learners. For example, if the learners wish to have only a superficial knowledge of the information available, that is their choice.

There is no teaching to the "test," because there is no "test." The instructors may set "tests," and will set activities (akin to "assignments") if they wish, but taking or "passing" those is optional. Anybody, including learners, may set "tests" and "assignments," and anybody (including instructors) may take them. The aim of participating in a MOOC may or may not be to obtain a credit, or a qualification – the aim is primarily to learn.

8. UNDERSTAND THAT THE LEARNER WILL ENGAGE WITH OTHER LEARNERS AND IDEAS

The role of the learner is not merely to gather information and then to supply it to the newsletter. When the learners have constructed their own view of the material, and made it available to other learners (and instructors), and even the general public, the learners should be prepared to engage directly with others on the material constructed by themselves and on the material constructed by other learners. Again, this engagement may happen in the course LMS, but much of it will happen away from the site.

9. UNDERSTAND THAT THE FINAL "KNOWLEDGE" WILL BE NEGOTIATED

With the reduction of the authority of the instructor, and the contribution of information from the students, what is considered "correct" and "true" is what survives by negotiation and consensus. Arguments and discussions will occur among all members of the course (even among instructors). There is no call for an authority, and not even a need for the instructors to be consistent with each other. More importantly, on many issues, there will be the recognition that the "truth" is simply not known.

10. REALISE THAT THE KNOWLEDGE WILL ACCRUE, AND WILL CHANGE SHAPE

The knowledge at the beginning of the course is not the knowledge that will exist at the end of the course. The end knowledge and its value will be apparent only once the course is "over." And the course may never be "over" in the traditional sense (See next section).

It is crucial to understand that, although the instructors will supply readings, there is simply no body of knowledge that

exists on the instructors' side that will be poured into the little pitchers. Further, as the knowledge is added by the participants, other participants will not merely consume that knowledge, but will "remix" and "repurpose" it, and then contribute it. This does not mean that they simply copy it and paste it back – but rather, that they use it in different ways. The aim is not for students to merely find the information, but to use that information to perform other functions, such as raising awareness or supporting an argument.

11. ACCEPT THAT YOUR OWNERSHIP OF THE KNOWLEDGE DOES NOT EXIST

As an instructor, you will have constructed the course environment, and will have provided the impetus for the course. For that, you deserve credit, and thanks. But you own nothing. Nothing of real value, anyway. The real value will have been constructed by others (the learners), and will continue long after the course has "ended." Just as the information is not spatially confined, so it is not chronologically confined. You may even find some of it again in other courses. At the risk of a metaphor, if your course has been successful, then your child has become an adult, and has gone his or her own way.

12. BE PREPARED TO BE SCARED.

Teaching through a MOOC is very different from the methods used in our education. Many of us are only now coming to grips with online education as described in Stage 2 or 3 above. In Stage 4, the course has been integrated with something that carries all the power (positive and negative) of social networking. You will be scared. Your students will be scared. The amount of self-regulation required by you and your students will, at first, be daunting, but is sure to be more easily accommodated as you proceed. Education has never been for the faint-hearted.

13. KNOW THAT THERE IS MUCH TO BE RESOLVED.

There are many issues that will need to be resolved when running MOOCs, not least of which would include learner autonomy, supporting those who are new to the concept, lack of technical support, complexity, privacy and confidentiality, seeming lack of structure (and negotiating between complete rigidity and chaos), assessment and evaluation, student feedback, institutional policies, the wide range of possible tools and their interoperability, their impact on collaboration, and the reliability, longevity and free access models of external tools and resources. Even

where Continuing Medical Education (CME) might be more suited to MOOCs, issues of recognition will have to be considered.

CONCLUSION

The LMS is not yet dead, but there are signs that its limits are becoming restraints on learning, and that further adjustments may not meet the demands of future learning. The emergence of the MOOC is one of these signs.

In Item 3, I noted that the "centre does not hold." Sceptics of MOOCs may believe that this nod to Yeats' poem can be used to evoke the next line: "Mere anarchy is loosed upon the world." The author would argue, however, that medical educators should look closely at the concept of a MOOC, so that MOOCs can be properly understood and used in such a way so as to have a positive impact on medical education. MOOCs are currently being used primarily by innovators and early adopters, and there are many areas that are waiting to be researched.

Final Note: In order to reduce complexity in this article, the author has purposely avoided mentioning the related concepts of Personal Learning Networks (PLNs) and Personal Learning Environment (PLEs).

NOTES ON CONTRIBUTOR

KEN MASTERS FDE PhD is Assistant Professor of Medical Informatics at the Sultan Qaboos University, Sultanate of Oman.

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Author Information

Ken Masters

Sultan Qaboos University