Learning Resources and Massive Open Online Courses–What's Going On?

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Abstract. This chapter addresses the issue of learning resources in Massive Open Online Courses (MOOC) at the University College Absalon and explores how faculty teaches within this new format and design. MOOCs date back to 2008. Over time, fundamentally two kinds of MOOCs evolved: cMOOCs and xMOOCs. The latter was influenced by more traditional e-learning courses in distance learning and highlights the concept of massiveness (MOOCs for many) while the first was born from theories of connectivism and emphasizes the importance of collaboration, production, and bringing learners together. This chapter briefly introduces the evolution of MOOCs and then turns to the faculty's views on using learning resources in MOOCs. The chapter concludes by listing relevant issues for further research

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1 Introduction

MOOCs (Massive Open Online Courses) have become a serious player within the field of education and learning in the past few years. While MOOC research is still a relatively new field, it experienced a rapid development over the last years (Liyanagunawardena et al. 2013; Bayne and Ross 2014; Pilli and Admiraal 2016). Much of this research has had an emphasis on learners' outcome as well as MOOC development as suitable business model for universities and other institutions of formal education. However, despite the abundance of MOOCs to attend, not much emphasis has been brought on the actual construction of learning resources within MOOCs. Similarly, little attention was dedicated to the demands they lay on teachers' required competences and skills to meet these transformations in the educational design.

Furthermore, pedagogical and didactical discussions about MOOCs often tend to adapt a more technical approach about a certain MOOC platform and its affordances and constraints (Knox 2013) rather than focusing on content, production, teaching, and learning (Christiansen and Rosenlund 2016). Only very limited research focuses on what happens when academic staff members are asked to reinvent themselves as MOOC educators (MOOC-utvalget 2013; Evans and Myrick 2015).

In this chapter, I will tackle some of the challenges arising from teachers starting to work in a MOOC environment with special emphasis on the problems occurring when teachers become producers of MOOC content. Thereby, the aims of this paper are

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twofold. On the one hand, the author explores what characterizes learning resources being produced, and, on the other hand, what are the educator's intentions with these learning resource Sect. 2

The history of MOOC dates back to 2008, the year of their initial introduction. Fundamentally, two kinds of MOOCs evolved the first years: cMOOCs and xMOOCs. While xMOOCs were influenced by more traditional e-learning courses in distance learning and highlight the concept of massiveness (MOOCs for many), cMOOCs emerged from theories of connectivism (Siemens 2005; Pilli and Admiraal 2016) and emphasizes along with the importance of collaboration and production the social aspect, i.e., bringing learners together. The digital researcher Mark Smithers (2012) put it this way: "In an xMOOC you watch videos, in a cMOOC you make videos".

One of the features of cMOOCs is that they establish a tight connection between learning and participation, communication, and collaboration in learning processes. Learning and studying are not isolated and lonely in nature, as both are activities that happen in collaboration with peers. A cMOOC emphasizes not only the importance of artifacts produced by students, but also the value of peer-to-peer feedback and networking.

According to Pilli and Admiraal (2016, p. 225), the difference between the x and the c lies in the following: "The earliest, most well-known categorizations see MOOCs developed as either courses with an emphasis on connectivist ideas (cMOOCs) with students learning from and with both educators and each other in online course environments or as courses involving more individual-focused learning (xMOOCs) following traditional cognitivist-behaviorist approaches, with traditional course structure, content and methods". Thus, cMOOCs emphasize creation, creativity, autonomy, and social network learning and focus on knowledge and creation, whereas xMOOCs emphasize a more traditional learning approach through video presentations along with short quizzes and testing with a focus on knowledge duplication.

Put this way, it becomes clear that it is two–actually quite different–approaches to learning MOOCs offer: Learning as pulling-out information from a certain resource being a video or a text as opposed to learning as an activity that is social, communicative, collaborative, and productive. In consequence, one needs to be specific and cautious when choosing the MOOC type, its design, and the principles of learning and teaching that can be located in the MOOC-design.

Learning in xMOOCs encompasses the acquisition of knowledge that is prepresented and made available via the MOOC for unlimited or limited periods of time. In this perspective, a MOOC is a collection of learning resources that can be explored and, during this exploitation, learning occurs. The main goal is, therefore, to gather and collect the best learning resources (e.g., text and videos) from the best teachers and scientists to make them available to all attending the MOOC. This fundamentally corresponds to a *push* ideology consisting of resources being pushed out to whoever attends the MOOC. In marketing, this is often referred to as *taking the product to the customer* and can be suitable for branding an institution.

However, the x and c camps also have things in common. First, both formats carry the ability to become a player in the field of lifelong learning and learning for everyone. Second, they also share the idea of free access and the idea of scalability. Third, both

camps can–at least to some point–cash in on the idea of open learning resources (OLR) for all.

When it comes to concepts of learning and teaching and the role of pedagogy in the design, research uncovered substantial differences (Rodriguez 2013). The idea of openness in MOOCs are inspired by thoughts of democracy for all, accessibility, and trying to reduce the distance between those who enjoy access to formal education and those who are deprived of such opportunities.

For the past five years, MOOC-design, however, has drawn inspiration from both of these basic approaches, which resulted in the emergence of more *blended* formats.

According to Bayne and Ross (2014, p. 22), "[w]hat we are starting to see now is a move away from the cMOOC/xMOOC binary toward recognition of the multiplicity of MOOC designs, purposes, topics and teaching styles". The empirical research presented in this chapters deals with a MOOC-design drawing on both the x and the c principles. Post-2010 MOOCs should rather be considered design frameworks (as proposed by Gynther 2015) drawing on both elements from the x and c alongside views on teaching and learning, curriculum, and roles of participants in a MOOC (Christiansen and Rosenlund 2016; Pilli and Admiraal 2016).

2 Methods and Sample

This study runs along the lines of the work presented by Evans and Myrick (2015). MOOC teachers from the University College were interviewed individually and in groups. The educators produced MOOCs in the subjects of Danish, mathematics, and science for the teacher education program. The empirical part of this study derives from observations in workshops with 17 MOOC educators' collaboration and negotiations on how to construct their subject in a MOOC milieu. These discussions were audio recorded, transcribed, coded, and analyzed. In a subsequent step, follow-up interviews with three educators offered additional information.

The MOOCs analyzed in this study are to be seen as design answers to a certain and specific educational and political situation in Denmark, namely the requirement that by 2020 all Danish primary school teachers have to have a bachelor degree in the subjects they teach. Approximately 11,000 primary school teachers are affected who hold a bachelor degree in education but with majors in other subjects than the ones they currently teach. In other words, more than 10,000 primary school teachers, who for many years taught a course without being formally qualified, suddenly need professional development. This calls for a need for educational concepts that are.

- based on the fact that the primary school teachers already have a large amount of professional knowledge, experience, and professional skills;
- adaptive as the primary school teachers only have to take parts of the full curriculum thanks to their professional skills and experience acquired while having taught the subjects in question for some time;
- scalable because it is uncertain how many primary school teachers need training in the individual subject areas;
- flexible in relation to primary school teachers' work situations;

– and, at the same time, resource-efficient compared to the monetary and time resources required by regular teacher training programs.

As an educational concept, MOOCs seem able to fulfill the requirements of scalability, adaption, and flexibility. In consequence, various Danish municipalities are examining the adequacy of MOOCS to respond to the political and educational challenge. The University College Absalon produced numerous MOOCs in various subjects for primary school. Some of the College's academic staff that was involved in MOOC production, contributed to the empirical studies also discussed in this chapter.

The MOOC-design developed by the University College Absalon consists of the following parts:

– a digital environment covering one subject of the Danish teacher training program (e.g. English, mathematics, geography etc.);
– a self-evaluation test taken by all future MOOC-students;
– A face-to-face session between the student and the faculty in charge of the MOOC aiming at discussing the self-evaluation test;
– MOOC-study;
– face-to-face teaching and guidance both individually and in groups.

As the design shows, this is a blended educational design mixing online-MOOC studying with on-campus teaching. Both the self-evaluation test and the session with faculty cover the primary school teacher's strengths and weaknesses regarding the subject. The MOOC design allows the primary school teacher to attend only those parts of the program where he/she lacks important knowledge and skills. In contrast, they can skip all those areas the test certified satisfactory knowledge. Thus, the design allows the didactical skills these teachers already acquired, partially over more than ten years of teaching experience, to be become a recognized part of their studies.

3 Teachers' Resource Intentionality in MOOCs

Learning resources are essential to all teaching and learning processes as they play a huge part in lesson planning. This also applies to educational design transformations discussed here. Faculty working with MOOCs involved in our study expressed frustration about the lack of availability of suitable learning resources that they can make available to students in this new digital learning environment. In addition, they also felt *forced* to use learning resources available in digital formats via open, accessible links on the internet. In this matter, they felt obliged to replace validated learning resources they have been using in their traditional instruction for longer time with online resources of possible lesser or maybe even unknown value: "[w]hen we produced this MOOC we learned that it was somehow required or expected […] that we use digital, easy accessible, online, free resources […] and such resources are not always easy to find […] or replace, rather" (teacher end MOOC-developer). This could indicate that accessibility is viewed as more important than content and the overall decision to use the most suitable learning resources–and suitable in this case meaning easy online access. While the mere digitalization of textbooks can solve some of these challenges,

the analysis of digital online learning resources suitable for this learning environment is crucial.

Another matter of importance is that faculty in general, and teachers in particular, tends to behave like collectors. Particularly experienced teachers collected throughout their career various kinds of more personalized learning resources, such as student reports, texts or pictures. These resources are of a more *personal* nature and, thus, in contrast to traditional learning resources, unsuitable for digitized reproduction. In the view of the University College's faculty, these resources are often not essential for the teaching but merely function as add-ons or extensions to more traditional learning resources. "We know, of course […] that all this […] well, what I have collected what I use in my teaching as what could you call it […] top of the iceberg […] is not crucial to my teaching but again it is my thing and […] well, it makes it personal in some way, do you know what I mean?" As we can see, this transformation is not easy and these "top of the iceberg personal things" do play a role in personalizing the teaching, both building a profile and adding a personal brand. A study (Christiansen and Rosenlund 2016) shows that developing such a personality profile is highly important for persons teaching in MOOCs.

4 Conclusions

Teaching via MOOCs has proven to be both difficult and challenging for University College faculty. In addition, research on what is required to be or become a good MOOC teacher is very limited. The work done by Allen and Seaman (2014), Bayne and Ross (2014), and Lowenthal et al. (2018) all show that the attitude of faculty becomes more positive the more they teach online and gain experience within this field. However, competences must have room to develop and time is of importance regarding the development of these necessary competences. Time for discussions along with time for re-design is also of crucial importance.

Some of our previous studies (Christiansen and Christensen 2010) showed that the difficulty to transform traditional teaching into online environments, such as MOOCs, are not primarily located in the subject itself. Challenges emerge from the attitudes of the teaching personnel and their view on their subjects, the specific pedagogies connected to the way this specific subject should be taught, the ways student learning is viewed as most successful, and what roles teachers and students should follow. It is highly unlikely that particular elements of a subject can be excepted from transformation into online teaching. In contrast, it is much more likely that some teachers found that the mentioned elements *under no circumstances* can be a part of online education, while others contradicted them and considered the very same elements to be best examples for a successful transformation. Nevertheless, the relationship between teachers' views on their subjects and the solutions regarding to teaching transformations requires further research.

Regarding research on MOOCs and students, results about the efficacy and outcomes of online education and learning for various student personae is by now well established. One of the major concerns is the proven limited efficiency of online education for specific student groups, such as individuals coming from educationally

disadvantaged backgrounds (e.g., Kalman 2014). Regarding MOOCs, research in this field is yet to be carried out (Liyanagunawardena et al. 2013). Consequently, MOOCs are in danger of inheriting the shortcomings of traditional e-learning, especially regarding student outcome. Further research is needed regarding MOOC-design sensitive to students' individual needs and competences enabling individual learning paths (Gynther 2015).

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