MOOCS AND CHANGE DYNAMICS IN HIGHER EDUCATION

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Background, aims and scope

Selwyn (2013) highlights the importance of national governments' role as to mediate and adapt so-called incoming forms of educational technology. He even suggests that national governments may act as *local interpreters* and *cleansers* of incoming global models of educational technology provision and practice (Selwyn, 2013). The implementation and interpretation of the concept of MOOCs may represent an interesting case in this respect. Most higher education institutions (HEIs) in Norway are public and education is free for everyone. Currently there are 8 universities, 20 university colleges and 5 scientific colleges owned by the state. In addition, 23 private higher education institutions receive government support (these numbers are about to change due to ongoing processes of merging HEIs). Moreover, Norway has a long tradition for distance online education, and several initiatives regarding blended learning have emerged during the last decade (Tømte & Olsen, 2013; Norgesuniversitetet, 2015).

In 2015, there were 21 MOOCs registered in the national portal www.mooc.no in Norway, most of them covering various aspects of continuing education. In most cases, teacher staff within HEIs designed and developed these MOOCs. These teachers held a particular interest in online and blended teaching and learning. Moreover, few of these MOOC-initiatives connect to institutional strategies within the HEIs. Neither are these MOOCs initiated by internal university stakeholders, or by governmental bodies. An exception is the MOOC in Mathematic-didactic, initiated and funded by the government, and with academic and administrative affiliation within two HEIs and their teacher education departments. This particular MOOC offers continuing education in Mathematics mainly at 5-10th grade to teachers who work at schools around the country.

Based on this particular MOOC for math-teachers, the present paper aims to explore if this MOOC may enhance pedagogical innovation in the participating/actual teacher educations; and in which ways it may serve as a driver in order to enhance knowledge development in terms of new teaching models or alternative teaching models within the two participating HEIs. The paper presents preliminary findings from an ongoing formative evaluation study of this MOOC, running from September 2015-September 2016.

The following sections include a short research review, mainly focusing on literature on institutional approaches to MOOCs, a short introduction of the formative evaluation study and how this particular paper relate to this, including sources of data on which the present paper are based on. The next sessions covers presentation of preliminary findings and relate these to relevant studies from the international body of research.

Research review

Research has highlighted the difficulties of defining a MOOC compared to conventional online courses (Bates, 2014; Tømte, Fevolden & Olsen, 2014). An initial challenge is that there are different definitions on MOOC, mainly due to their various nature when it comes to structure and pedagogy (Hollands & Tirthali, 2014). One acknowledged approach is to distinguish between two types of MOOC, cMOOCs, and xMOOCs, often similar to standard online courses but open and with large-scale student numbers (Downes, 2013). Even if several understandings and interpretations exist of what constitutes MOOCs, most include aspects of scaling, technology; target groups and motivations for developing a new MOOC (Allen & Seaman, 2015; Jansen & Schuwer, 2015). In this paper, we focus on a particular type of MOOC, which has been used for continuous educational purposes, combining advantages of face-to-face online learning situations and advantages of online-learning: small open online courses (smOOC) or small private online courses (SPOOC) (Hayes, 2015), which are limited to a certain number of participants, and with the requirement of a participation fee.

During the years, MOOCs have gained ground around the globe. While emerging from the U.S., the concept has reached the Middle-East, Africa, Australia, New Zeeland and Japan several European countries to mention some (Adham & Lundquist, 2015; Bonk, Lee, Reeves & Reynolds, 2015; Jansen & Schuwer, 2015). Researchers demonstrate how countries adopt and adjust MOOCs to their cultural, social, political, economic situation, and to their technological infrastructure and organization of Higher Education. For example, when comparing MOOC strategies in Europe and U.S., researchers found significant differences in how the U.S. and European countries approached the impact of MOOCs and their understandings of the efficiency of digital education and online learning (Jansen, Schuwer, Texeira & Aydin, 2015). One significant difference was how HEIs in U.S. and Europe considered the potential of MOOCs as sustainable method for offering courses. Another observation included perspectives on finance and scalability dimensions, these were seen as important in the U.S., but not as a primarily objective in European HEIs. Moreover, in Europe, the emergence of MOOCs seems to have revitalized the attention towards online learning within HEIs (Teixeira, Volungeviciene & Mazar, 2014). Furthermore, in some countries, such as Norway, the government has also had an active role in the developments of MOOCs. For example as initiating new MOOCs, as exemplified in the present paper, by facilitating adequate technological infrastructure to the higher education sector, giving financial support and by overall engagement in debates on accreditation and the like (Ministry of Education and Research – NOU, 2014).

Schuwer and colleagues (2015) studied how experienced open and distance learning (ODL) leaders from several European HEIs with considerable experience with MOOCs approached and judged opportunities and threats of MOOCs in HEIs. They found that most of these are on the macro level, including accreditation, (ECTS), innovation and availability of multiple platforms (Schuwer, Gil-Jaurena, Aydin, Costello, Dalsgaard, Brown, Jansen & Teixeira, 2015). Interestingly, these issues are sometimes interconnected or representing both sides. For example, MOOCs may enhance institutional collaboration, and the ECTS-system may serve appropriate for accreditation by ECTS of MOOCs. However, this particular system of ECTS is also judged as making it difficult to bridge non/informal and formal education. MOOCs may bring innovative and alternative pedagogical models into HEIs; but this may also be a difficult process due to too much regulation within the institutions.

The study: A formative evaluation of a MOOC-like course addressing math teachers in Norway

Data collection

The original study is an ongoing formative evaluation study of a MOOC-like course addressing 5th to 7th grade-mathematics teachers in Norway (September 2015 – September 2016) commissioned by the Norwegian Centre for ICT in Education. To investigate a broad range of topics on two different levels, user level (teachers) and governance level (funding; higher education institutions cooperation with project leader), we triangulate both quantitative and qualitative methods and data. Data collection included semi-structured interviews with teachers, school leaders, pupils and higher education institutions providing classes lasting around 30 until 45 minutes each, observational data of participating teachers in online study groups, document analyses (strategic documents) and a teacher survey.

Data analysis

The present paper emphasize preliminary findings based on semi-structures interviews with stakeholders and coordinators within the two higher education institutions responsible for the MOOC-like course, along with semi-structured interviews with stakeholders from the government side. Issues raised within the interviews included background for participation; internal organization and tasks; financial perspectives, collaboration within the institution and with the partner institution and the government; academic and administrative perspectives on pedagogical solutions within the MOOC; routines for knowledge sharing about the MOOC within the institution. During the interviews, the researchers took extended notes, further validated by audio recording. Furthermore, we sent the informants the interview notes for validation. We will discuss our preliminary findings from these interviews in the light of research on institutional approaches to MOOCs.

Findings and discussion

In this paper, we study a MOOC initiated by the government. A governmental body in collaboration with two distinct HEIs, and their teacher education departments were in charge of the development of the MOOC. There was also a steering committee with members from the above-mentioned bodies and from the national committee for teacher education.

An interesting observation in our study involves aspects on what is a MOOC. The various stakeholders involved in the actual MOOC apparently seem to hold different conceptions of it; we observe statements such as "it is a MOOC; or a MOOC-like course"; or "it is an online course" and the like. Following this, the governmental bodies are concerned with exploring the possibilities that comes with MOOCs in terms of innovation and reframing informal/unformal and formal learning as various approaches towards continuing education and lifelong learning. We identify these expectations in the steering documents of the MOOC, and in our interviews. However, this point of departure is contrasting the views of the HEIs. These stakeholders are more likely to struggle with connecting the MOOC to ongoing activities within their institutions. The existing structure includes organize the course in terms of conventional distance online learning, including small student groups and tutors, and this structure has been applied to the particular MOOC as well.

We may interpret these diverse understandings and approaches of MOOCs in terms of different perspectives on quality issues, where different aspects of quality are interpret differently, such as quality of academic content; pedagogy; technology; communication and recruitment of students.

Initially, to enhance collaboration and innovation across institutions, the government required the MOOC to affiliate to at least to HEIs. Today, two HEIs and their teacher education departments are involved, with shared task related to administration and academic content, and coordinated by an overall governmental body responsible for the overall coordination and technological solutions. This approach, including several HEIs to host and develop one particular MOOC, seems to correspond with what seems to be considered as one of the opportunities within MOOCs as flagged by ODL-stakeholders, since it may enhance knowledge development across institutions (Schuwer et al., 2015).

However, our present observations regarding this organisation of the MOOC-like course are that it becomes difficult to place responsibility and to see how the MOOC connects with existing activities within the HEIs. One of informants at one of the HEIs says:

> It is challenging to work together with so many involved institutions in one single project. Moreover, in this particular case, many of the involved persons have only a small share of their position connected with the project, which again has resulted in communication problems.

As demonstrated in the research literature, missing strategies on an institutional level to integrate MOOCs and link them to existing and mainstream activities within the institution may hinder their uptake (Schuwer et al. 2015). This might be the case in here, and we will pursue this when continuing our study.

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