**Presented in**
**8th Pan-Commonwealth Forum on Open Learning (PCF8)**
**27 - 30 November 2016**

**Available at**
**http://oasis.col.org**

**MOOCs as Provisions in Graduate Education for Future Professional Development**

*Abstract*

In this study, we report the experiences of embedding MOOCs in a graduate course on distance education at the University of Iceland - School of Education 2014 and 2016. Students evaluated MOOCs and their participation. The participants in 2014 were 17 and in 2016 23. They signed up for a MOOC of their own choice most for the first time. In the spring 2016 a phone survey was conducted with the 2014 participants (77% participation rate). In addition students from the 2016 cohort (57% participation rate) completed an online survey. Students were mostly positive, experience was described for example as fun, interesting, and a new way of learning. However, some mentioned that the courses they took were too easy for comfort, included "parrot learning", that the learner environment lacked a personal contact and was non-comparable to f2f courses. Workload during the project varied and may have been too little for some students. About 81% felt that taking a MOOC had benefitted them: Directly in their work for review or learning something new; to experience that form of learning; ideas for future practice; some had already started using what they learnt, in their immediate practice. About 85% thought it likely they would sign up for MOOC courses in the future. About half of each group had signed up for at least one other MOOC. Many were interested in Icelandic MOOCs as students (70%), teachers (54%) or designers (36%). It worked well to embed MOOCs into a university course with opportunities for f2f meetings and requirement for group work in relation to the MOOC participation. There were indications that the experience opened doors or gave graduate students ideas in relation to their future or immediate teaching practice and professional development. More attention is needed to work load. Language is an issue and development of open online courses should be considered at the national or local level open to particular language groups that can include more relevant content for the participants.

**Introduction**

The role of MOOCs can be an important one regarding professional development, not the least in the area of ICT in education where the need has been great for teachers all over the world. In this paper, we will describe the experiences of embedding MOOCs in a graduate course (NOK042F) on distance education at the University of Iceland (UI) School of Education in 2014 and 2016. One purpose of this integration was to expose students to the opportunities involved before graduation so they could be more aware of what might be available for them in their future professional development.

The focus so far on the discussion of effects of MOOCs on education in Europe, with associated opportunities and threats, has largely been on pedagogy and learning in a more abstract way rather than on more concrete effects, for example the opportunity to use MOOCs as a tool for professional development for teachers (Schuwer et al., 2015). Much of the literature about the impact of Massive Open Online Courses (MOOC) has been centred on the US context even if data showed a high percentage of MOOC participation in Europe and that in Europe public policy was driving MOOC institutional uptake (Jansen et al., 2015). Recently more research has centred on developments in Europe in this respect. As an example the European Association of Distance Teaching Universities (EADTU) hosted a conference "WOW! Europe embraces MOOCs" in Rome in last November where results from the HOME project (Higher Education Online: MOOCs the European way) were introduced as well as from other initiatives involving institutional MOOC strategies. One of the paper presented at the conference described such initiatives at the UI in Iceland (Jakobsdóttir, 2016).

In 2013 a workgroup at the UI examined the "MOOC landscape" at the time and recommended strategies for the university regarding development of blended learning and MOOCs (Hafsteinsson et al., 2013). The group gathered data about UI students' experiences regarding MOOCs and the data indicated that many used open educational content and that some had explored foreign MOOCs and even completed MOOC courses. The recommendations by the workgroup included that each of the five schools of the UI would experiment with MOOC integration in selected courses. In 2014, this was explored in four courses with fairly good results (Jakobsdóttir, 2016). One of the courses involved was a course on distance education (NOK042F), which is a graduate course with students mostly aiming to become teachers at the upper secondary or who already are teachers at that school level but aiming for a masters' degree or a teachers' licence. The course was taught two years later and it was decided to include again a project where students could participate in MOOCs and evaluate their experiences. In this study, we explore the experiences of embedding MOOCs in this course. The course was online but with campus sessions.

A major purpose of the project was to expose students to the opportunities involved before graduation so they could be more aware of what might be available for them in their future professional development (PD). Research questions are the following:

- How do students experience MOOCs and regard it as part of their tertiary education?
- What are their attitudes, how do they evaluate MOOCs and their participation (usefulness, pros & cons)
- Are there effects of trying out a MOOC in retrospect/in the "longer run"?

## Method

*Design and participants*

This was a case study approach, which included two cases (two cohorts in a course on distance education exploring the use of MOOCs). A mixed-method was used to collect quantitative and qualitative data from participants by online surveys and phone interviews.

All of the participants in the study were graduate students in the course on distance education. In 2014 there were 17 students in the course, 14 females and 3 males in the age range 29 to 58. They were all invited to participate in the study. Participation rate was 77%, 13 accepted the invitation, 10 females (71%) and 3 males (100%).

In 2016 there were 23 students in the course, 12 females and 11 males in the age range 25 to 63). Participation rate was 57%, 13 accepted the invitation, 6 females (50%) and 7 males (64%).

*The cases and data gathering*

The course NOK042F on distance education is a 10 ECTS online course, running from January to May, and includes two one-day (six hour) campus sessions, one in early January and one in early April. People who cannot attend the campus sessions in person are invited to participate online (via Adobe Connect) and/or can watch recordings from the sessions. Before the first session students read Anderson and Dron's (2011) article on the three generation of distance education pedagogies and the article was discussed during the session. The MOOC project was the first assignment in the course (2,5 ECTS, 25% of the final grade) and was introduced in the campus session. The majority of the participants had never signed up for or completed a MOOC and were not aware that such courses existed. Teams of students were formed (3 to 5 students in most teams). A list of potential MOOC providers and individual MOOCs were provided and during the session the teams divided the list between them and identified potential MOOCs of interest from each provider. After the campus session the team work continued mostly or entirely online (depending on groups). They got a list of references (reports and journal articles on MOOCs in education) and tried a MOOC of their own choice for 6 weeks, most for the first time (2,5 ECTS). All groups did presentations in mid-February outlining their experiences and turned in their final report about a week later.

Three students from the 2016 course surveyed the participants (for an additional 2,5 ECTS final project in the course). The teacher[1] initially sent e-mails to people from the 2014 cohort and those who agreed to participate in the study were contacted by the graduate students who collected data via phone interviews at the end of April 2016 where data was entered online. One student, who had difficulties finding a time for a phone interview, sent a reply directly into the form. Students in the 2016 cohort received an invitation to participate in the study from their fellow students via the Moodle LMS and a reminder. The completed an online survey in early to mid-May by themselves.

*The online surveys*

The survey for the 2014 group included 20 questions. There were six quesions on experience and usefulness, advantages and disadvantages of the courses; four questions about the workload and time spent; seven questions about experience of later MOOCs and interest for participating in or designing other MOOCs; and then three other questions. The survey for the 2016 group included 34 questions similar to the above but more information was gathered about the courses involved including provider, pedagogy, and technologies used. Both surveys were created by the authors and set up in Googleforms.

## Results

[1] First author of this paper

*The selected courses*

Table 1 and 2 provide an overview of the MOOCs which were selected by each cohort. In 2014 there were three groups of students and one who worked individually. The students had been especially alerted to the course K-12 Blended & Online Learning provided by Coursera, which had the same theme as the Distance Education graduate course but other potential courses and providers were also listed and students could explore on their own what was available, for example via mooc.ca. However, about 76% of the group chose the K-12 Blended and Online Learning course. Everyone in two of the groups (B and C) chose to sign up for it as well as two of five students in group A. The other three in group A chose two different Coursera courses but one chose a connectivist course on digital citizenship at the University of Alaska. The individual student, who missed the first campus session and started a bit later than the others, also chose a Coursera course. Three of the courses were directly linked to the theme of the graduate program (ICT in education) but two were linked to the graduate students' majors and/or interests (namely finance and health).

Table 1 Overview of MOOCs in which students participated in the course Distance Education at the University of Iceland - School of Education, spring 2016

| Providers (total no. participants) | Sub-provider | Courses | Groups (no. of participants) |
|---|---|---|---|
| Coursera (16) | University of Georgia & Kennesaw State Univ. | K-12 Blended & Online Learning | A(2), B (5), C (6) |
| | Colombia University | How viruses cause diseases | A (1) |
| | University of Pennsylvania | Gamification | A (1) |
| | University of Michican | Introduction to Finance | D (1) |
| University of Alaska (1) | Dr. Jason Ohler | Digital Citizenship | A (1) |

In 2016, there were six groups of students. Only one student chose each MOOC except for one MOOC on teaching with Moodle from Moodle.org, which was a topic of high practical interest to many of the students, some of whom were aiming to create a Moodle course in another assignment later in the course.[2] There were seven different courses (41%) run in the Coursera platform, four (24%) by edX, two by OpenLearning, one by FutureLearn, one by Alison, and one by PR Academy. The content of about 41% of the courses (7) were related to ICT and media in education and/or distance or blended learning. Whereas the other 59% had content in relation to varied themes including language, physics, sustainable development, and personal development, see Table 1.

Table 2 Overview of MOOCs in which students participated in the course Distance Education at the University of Iceland - School of Education, spring 2016

| Providers (total no. participants) | Sub-provider | Courses | Groups (no. of participants) |
|---|---|---|---|
| Coursera (7) | New Teacher Center, Silicon Schools Fund, Clayton Christensen Institute | Blended learning: Personalization education for students | D (1) |
| | UCSD | Learning how to learn | A (1) |
| | | LearnToMod for educators | E (1) |
| | University of Leiden | Terrorism and counterterrorism | A (1) |
| | University of Michigan - School of Information | Programming for everybody (getting started with Python) | F (1) |
| | University of North Carolina | Positive psychology | E (1) |
| | University of Virginia | How things work: an introduction to physics | E (1) |
| Moodle.org (7) | | Teaching with Moodle | C (4), D (2), F (1) |
| edX (4) | AMS Institute, University of Delft, Wageningen (MIT) | Sustainable urban development | F (1) |
| | Berkeley University of California | The Science of Happiness | B (1) |
| | Columbia University | Machine learning for data science | A (1) |

[2] Moodle is also the most widely used LMS for schools and universities in Iceland.

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|---|---|---|---|
| | | and analytics | |
| | Weston High School | On-Ramp to AP* French language and culture | B (1) |
| Open Learning (2) | | Games in education: Gamification | A (1) |
| | | Creative leadership for effective leaders | C (1) |
| Alison (1) | | Diploma in sustainable development | F (1) |
| FutureLearn (1) | Creative Skillset, The Production guild | Film production: Behind the scenes of feature film making | B (1) |
| PR Academy (1) | | Public relations | B (1) |

There appeared to be a trend of more varied selection of courses between the cohorts which might well reflect a greater selection and number of MOOC courses and providers available. But also there was no obvious course found in 2016 directly matched to the main graduate course content which was the case in 2014.

*Students' experiences and reactions*

Students' reactions were mostly positive. The described their experience for example as fun, interesting, or a new way of learning. However, some mentioned that the courses they took were: too easy for comfort, included "parrot learning", that the learner environment lacked a personal contact and non-comparable to f2f courses. Workload during the project varied and may have been too little for some students (based on number of ECTS)

About 81% felt that taking a MOOC had benefitted them in various ways: Directly in their work for review or learning something new; to experience that form of learning; ideas for future practice; some had already started using what they learnt, in their immediate practice.

About 85% thought it likely they would sign up for MOOC courses in the future. More than half of the 2014 group (54%) and 42% of the 2016 had signed up for at least one other MOOC (in English). Many were interested in Icelandic MOOCs as students (70%), teachers (54%) or designers (36%). The following are examples of students' descriptions of their experiences.

- It was very handy that I could listen to the lectures on my smartphone wherever, whenever...
- I am of the opinion that it is vital for all teachers in those subjects to get to know the way this course was set up. In my job I have seen how videos have helped students to understand calculations and models. This, on addition, provides teachers with the opportunity to stop running around students that are not paying attention or did not show up for the previous class...
- The American K-12 education system was not mentioned specifically, however, it became evident that the course was first and foremost designed for active teachers in that primary school system. Every single example given in the lectures were out of that environment and the same applied to close to every reading material.

The following is a summary of advantages and disadvantages of MOOCs based on the graduate students' survey answers:

Advantages included flexibility, access, short lectures, no cost, quality lectures, user friendliness and that the courses were meeting students' needs.

Disadvantages, on the other hand included that the courses tended to be impersonal and teacher oriented and sometimes included repetitive learning. Some students criticized the assessment which sometimes included meaningless praise or was random. The content was sometimes too much oriented towards the USA context and not always up-to-date (2016).

**Discussion and conclusions**

On the whole it worked well to embed MOOCs into a university course with opportunities for f2f meetings and requirement for group work in relation to the MOOC participaton. Study circles appear to be a very useful pedagogical method for groups of adult students taking a MOOC together (Norberg, Händel and Ödling, 2015).

More attention is needed, for example to work load in relation to credits for a project of this kind and the kind of MOOC involved.

Language is an issue and development of open online courses should be considered at the national or local level open to particular language groups that can include more relevant issues and contexts for the participants involved.

There were indications that the experience opened doors and/or gave graduate students ideas in relation to their future or immediate teaching practice and professional development. The kind of project described in this paper could work well in programs at the university level or in vocational studies. Graduates become more alerted to opportunities to sign up and participate in open online courses and are given "provisions" for their future travels through the professional development landscape in an ever-changing world and shifting "fellow-ships."

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