Designing for Open Learning: Design Principles and Scalability Affordances in Practice

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Abstract
This work-in-progress paper elaborates on a gradually evolving approach to design of open learning and the design principles used by the Open University of the Netherlands in short open courses - online masterclasses and in Massive Open Online Courses – delivered in the learning environment of the Open University and in the experimental multilingual MOOC aggregator EMMA as part of a European project. As the paper will demonstrate, these principles can be seen as building blocks of open scalable design of active and engaging learning.

Author Keywords
Open online learning; MOOCs; design principles; active learning; scalability.

Introduction
Massive open online courses or MOOCs present a specific case in online learning. The promise of openness implies inclusiveness, in other words, accepting learners of diverse knowledge levels and backgrounds with potentially equally varying goals, interests and intentions regarding MOOC participation [5]. Massiveness refers to the fact that a course can host large numbers of participants. Attributes open and
In a Massive Open Online Course all are welcome, yet, it is not known how many will turn up, whether they will stay or not, what they will actually do once they turn up and choose to stay and how to support them in their learning.

massive point to a new situation from the organizational and pedagogical perspectives as well. Providing meaningful learning experiences to potentially large yet unknown and not clearly defined learner populations is a challenging task. Fitting instructional design solutions that can be both scalable and effective from the point of view of deep and engaging learning are not at hand [2].

This proof of concept paper presents several instantiations of an approach to open online education realized recently by the Open University of the Netherlands in MOOCs produced as part of a European project EMMA. This approach explicitly connects design principles for active and engaging learning with the notions of openness and scalability.

Open online academic level learning offered by the Dutch Open University targets professionals as lifelong learners [4]. Learning tasks are based on state-of-the-art in the domain, have relevance for the professional practice and follow the principles of active and engaging distance learning [7, 10]. Offering such tasks in the online learning environment is seen as a stimulus for interaction of learners with each other and with the course content. Feedback can be provided by different actors and technologies [3, 6].

One particular type of open learning at the Open University are online masterclasses, designed as one week-long interactive learning events [4, 8] with a fixed structure. Each event starts with a limited number of introductory warming-up activities to be followed by an interactive live video session with a subject matter expert, some follow-up learning tasks that can be based on readings on the topic, asynchronous discussion assignments and another live session presenting new domain-specific research to end the event.

In the live sessions subject matter experts make use of and refer to the contributions of the participants posted during introductory activities, respond to questions and involve the audience in further discussions. These sessions are recorded and integrated in the course learning environment for those who have missed the live session but are still invited to contribute to discussions in the asynchronous mode. Thus, experts create an opportunity to interact with the learners both in real time and asynchronously.

In alignment with the notion of open learning, learners have full control of the extent of engagement with the course and its components. To enhance active participation, they are offered assignments and readings that are embedded in and relevant for the professional practice. Participants are stimulated to share their experiences with others and thus to contribute to the course.

Design principles crystallized and refined in the masterclasses were used to develop MOOCs. These principles are:

- Combining fixed course structure and flexibility enabled by live video interaction between experts and participants.
- Providing individualized feedback to participants as Questions & Answers parts of the live sessions and asynchronous forums in the form of one-to-many responses.
- Offering learning activities that are relevant for the professional practice of the participants, that they can use in their practice, like artefacts, analyses or designs.
- Re-use of materials such as video-recordings, units of instruction and assignments from previously held
events (i.e., online masterclasses) or regular Open University courses.

One of the MOOCs integrated a series of thematically connected online masterclasses with theoretical course design. Short reflection assignments linked these masterclasses to the MOOC core to broaden the offer of relevant content for the MOOC participants and increase the amount of meaningful exchanges between a broader group of learners involved in different learning trajectories. Although an absolute majority of participants of this MOOC remained non-contributors, a comment in the discussion board indicates that non-contributors are not necessarily non-learners: “I was only reading and would like to thank all those who contributes. I learn and enjoy this experience”.

In another MOOC group formation was introduced to increase the level of interaction between participants. Participants were encouraged to share contributions and provide feedback to each other in dedicated group spaces. The level of individual participation differed substantially per group, however, the overall activity level in this MOOC increased substantially [8].

Participation of the Open University in the EMMA project allowed to further develop and test this approach. The focus of the EMMA project is on providing European learners access to MOOCs in multiple European languages through a single platform, and thus promoting cross-cultural and multilingual learning (http://platform.europeanmoocs.eu).

One of the projects’ objectives is to test replicability of MOOCs across learning platforms and get deeper insights in the principle of re-use of viable instructional models and designs for MOOC design. Therefore, the two Open University MOOCs described above were replicated in the EMMA environment and delivered in Dutch and English. Thereafter, a MOOC on a new topic was designed and delivered in EMMA based on the lessons learned from the first EMMA experiences.

In EMMA MOOCs were delivered as bilingual courses, open for both Dutch and English speaking participants. Subtitles in both languages were provided to the video recordings of interactive sessions from the original MOOCs. In both MOOCs the course content and the navigation were adjusted to the platform and the interaction flow was adjusted to fit the communication functionality in EMMA. No groups were formed in EMMA. Additionally learning analytics were introduced to assist both learner and teacher [9].

Important lessons from the first implementation of the MOOCs in EMMA were as follows:

- Automatic subtitling and translation services proved an effective tool for delivery of the MOOC content in two languages. However, substantial effort in revision of transcription proved necessary [1].
- Recordings of interactive video sessions had to be adjusted for re-use in a new MOOC as they proved to be overloaded with the references to the original interactions with the audience. For participants in the new MOOC, it was difficult to understand the message and use the video to learn.

In design of a new MOOC in EMMA, re-use of recordings was combined with contextualizing. Short explanations about the origin of the recording were embedded in learning tasks together with questions or dedicated assignments. Furthermore, time frames were added to the fragments relevant for the task in order to allow efficient use. To stimulate interaction between participants other than in the content-embedded format, social media use was integrated by use of a closed Facebook group and a twitter hashtag. While the course was designed as a sequence of meaningful
learning tasks, each task constituted a meaningful entity so that MOOC participants in EMMA could have a meaningful learning experience independent of the amount of time investment in learning activities. Last but not least, a synchronous interactive video session was offered in addition to videos based on re-used recordings of video sessions with topic experts. A second run of the new EMMA MOOC is scheduled that will account for participants’ personal requests and interested by the delivery of additional topics and interactive live events in both MOOC languages. The use of participant preferences and direct requests in MOOC design presents a further stimulus of interactivity of MOOC as a form of open course delivery.

In sum, development of open learning can be seen as a chain of design iterations through which active learning principles undergo continuous testing and evaluation in practice. Ample use of video is combined with the search for formats effective in terms of learner-expert interaction as well as cost-effective. Re-use of materials, including video, organizing feedback as one-to-many communication, exploring affordances of social media as learning support manifest themselves as building blocks of open scalable learning design.

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