Author: Ewoud de Kok
Organization: FeedbackFruits

Title:
"Using MOOC-videos for Interactive Knowledge Transfer
and Peer Feedback for Deeper Learning"

Introduction:
In this short paper we outline a proposed course design incorporating various tried and proven elements of Blended Learning. In this design, MOOC-videos are aligned with the course topics and assigned as compulsory study material. Online discussions and formative practice questions embedded within these videos activate students and allow for an interactive learning experience. This, in combination with Peer feedback on student work, enables deeper learning. We highlight design decisions and indicate the success. We have used the H-MOOC framework to further categorize the implementation of this MOOC-based hybrid initiative.

Didactic Goal:
By replacing traditional lectures with MOOCs and online discussions teachers can optimize the use of face-to-face time with students and encourage higher-order thinking as described by Bloom.
Furthermore, providing peer feedback benefits the reviewing student too, since it improves their higher-level learning skills. It helps students monitor, evaluate and regulate their own learning process. Students that learn to reflect tend to become more critical in assessing and improving their own work. Ultimately the process of providing peer-feedback can lead to an increase in knowledge and help students to make better evaluative judgements (Popta et al. 2017[1]).

H-MOOC framework:
The course design described in this paper can be categorized as "MOOC as a driver" (high on both axes), since the formerly traditional courses are, in our proposed design, organized around a MOOC (e.g., flipped classroom), requiring high levels of teacher- and institutional support. Furthermore, the MOOC content is fully aligned with the content of the course in the hybridized curriculum.

Successful & promising experiences:
Didactic elements of the proposed course design (outlined below) have been successfully applied and supported by internal research at several institutions. We are not at liberty to publicly disclose the internal surveys documenting these successful experiences. A summary of the documentation is available upon request.

- Automatically suggested MOOC videos with formative questions and online discussions:
  - *HULT international business school*
  - *TU Delft*
- Peer feedback and problem-based learning in small tutorial groups
  - *Maastricht University*

[1] *Van Popta, E., Kral, M., Camp, G., Martens, R. L., & Simons, P. R. J. (2017). Exploring the value of peer feedback in online learning for the provider. Educational Research Review, 20, 24-34.*

- *University of Amsterdam*

We hypothesize that by combining these elements in an integrated course, the twin goals of fostering higher order learning and critical thinking can be achieved with far less teacher input than would be necessary by traditional means. Whether this hypothesis is correct will have to be proven with further research after the course design has been implemented in practice.

Course setup:
These steps describe, in chronological order, the synchronous and asynchronous elements of our proposed Blended Learning course. Synchronous learning refers here to learning events in which multiple students engage in learning at the same time.

1) Before the module starts, the teacher uses an Open Course Ware 'recommendation engine' to automatically find relevant, up to date materials for their course subjects. Next, the teacher makes a final selection of materials that students need to study and adds these to the compulsory course materials. In the TU Delft experience example, relevant MOOC videos were selected and added as compulsory course material.
2) As preparation for the contact moment, students are expected to asynchronously study the selected MOOC videos before class. To make this a less passive experience, the teacher adds inline practice questions to the MOOC videos. Formative practice questions allow the teacher to check whether students understand the topics. While open questions can also trigger students to start an online discussion thread.
   Since the traditional lecture is replaced by MOOCs in a flipped setting, interaction and social learning occurs mostly online.
3) During the face-to-face (synchronized) meetings, students are subdivided into groups. Learning analytics can potentially be used by the teacher to form groups based on preparation (MOOCs studied), engagement (online interaction) and understanding of the subjects (answers to practice questions). Once the groups are formed, students will need to complete a group assignment. In this assignment MOOC subjects are analyzed and evaluated to promote higher forms of thinking (Bloom taxonomy).
4) Once the group deliverable is completed in the face-to-face setting it is handed in online.
5) The submitted group work is assigned to individual students from other groups for online peer review. Criteria/rubrics can be created by the teacher to assure constructive peer-feedback.
6) During the next face-to-face classes, a sample of group assignments (together with the provided feedback) is plenarily discussed by the teacher.

Since face-to-face class time in this course design is dedicated (almost) exclusively to analysis and higher-order critical thinking, the success of this course depends in large measure on students' motivation and study skills. We therefore recommend this design for students at the graduate or postgraduate level. For pre-graduate students the course design would have be adjusted to accommodate an increased focus on fostering study skills and knowledge acquisition.