Bloomsbury Learning Environment

BLE Online Assessment & Feedback Case Study

Assessment in MOOCs for CPD

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Summary/purpose:

The Institute of Education's first MOOC ran on the Coursera platform for six weeks between May and July 2014 with an intention to provide Continuing Professional Development (CPD) for Primary Education Teachers based on a co-learning strategy. The pedagogy of this CPD MOOC followed the standard CPD format of curating resources and orchestrating peer collaboration.

The MOOC was designed and delivered by a team of 8 international authors from four continents, with additional support from a small team of teaching assistants. Learning objectives were centred around sharing of experience and practice, to enable participants to develop and improve strategies for ICT implementation in schools, to support head teachers and specialist staff in developing pedagogy-led and problem-led uses of ICT, and to gain greater awareness of the range of pedagogic innovation that uses ICT.

Such learning objectives and the CPD nature of the course are not in line with the provided assessment options on a typical MOOC platform, which is centred around quantitative methods and automatic grading using quizzes or formulas with easily identifiable 'correct' solutions. The design team worked creatively to bridge the expectations from the MOOC provider, the pedagogic experts, and the practitioners. The adopted solution focused primarily on peer assessment, but also on the quantitative aspects of forum contributions.

Implementation:

In line with standard CPD design, there was no formal assessment. The automated assessment methods using quizzes were not appropriate for evaluating qualitative descriptions and localised interpretations of theory that were the main outputs from participants. Peer assessment was the only form of assessment used.

Each assignment had a set of criteria, and once a participant had submitted their assignment they were sent to up to four peers to assess against the criteria, giving marks out of 10 and constructive qualitative feedback.

The four peer-assessed assignments were to:

- Create and describe a learning object
- Develop a ‘technology decision’ for their school or class
- Prepare a suggestion for tackling one of the key challenges identified in the literature
- Design a two-page brochure or newsletter to inform policymakers about the issues of implementation

In each case participants could what they had produced during prior activities on the course as part of their assignment. The requirement to review the outputs of their peers was also an opportunity for participants to use this experience to improve on their own outputs.

This peer assessment represents instances of reciprocal learning activities, but it is not collaboration, which was the main pedagogic aim. Collaboration is only possible within small groups, but the MOOC platform that was used did not have a suitable group function at the time. Typical collaborative tasks such as co-working on a shared output is currently difficult to achieve on a MOOC platform, and even harder to assess.

As the MOOC platform expects some form of judgement on whether a course has been completed successfully, pass and distinction levels were defined:

- Pass level: 60/100
- Distinction threshold: 85/100

The final participation points were calculated from:

- Number of submitted peer review contributions (20% for 4 in total in weeks 3-6)
- Number of peer reviews done (30% for 8 in total)
- Peer feedback scores (30%, based on scores for each of 4)
- Forum contributions across the course (20% for 15 in total)

Only those who did all four assignments were able to achieve a distinction. Average scores for weeks 3 to 6 were 68%, 75%, 79%, and 79% respectively. The slightly weaker participants were dropping out, perhaps, but the range is not very wide.

Of those active in Week 6, 27% gained a distinction and an additional 10% gained a pass, both towards the high end of MOOCs delivered via the University of London International Programme, of which this MOOC was a part.

Evaluation:

The MOOC was evaluated in detail, with a post course participant survey, participation analysis based on activity statistics (video views, forum views and posts, and similar), marking statistics, forum comment analysis, and additional analysis of wider data (mainly for marketing success measurement purposes).

Most of the evaluation focused on target audience reach and general experience with the MOOC. In the absence of formal assessment, success in relation to the learning outcomes was measured by evaluating participant expectations, perceived improvements, and course experience.

Respondents valued the overall course experience highly with 99% of responses in the ‘excellent’, ‘very good’, or ‘good’ category. Based on a pre- and post-course survey

comparison, their perceived improvement in subject understanding developed significantly, and a clear majority of respondents with over 90% of strong or moderate agreements indicated that the course was relevant to their career, that own goals were fulfilled, that expectations were met, and that the time investment resulted in satisfactory the learning outcomes. With a response rate of just above 20% of active final week users, these results are not fully representative, but they show that even without formal assessment, it is possible to evaluate the success of a course in terms of learning objectives and outcomes.

Interaction patterns in this specific MOOC deviated significantly from comparable MOOCs, in that forum discussions were much higher, with almost 40% of active final week users posting messages as opposed to 2-3% in other MOOCs. While the level of interaction itself can only be regarded as evidence for the existence of an active learning community; it is not a measure for achieving learning outcomes. Nevertheless, interaction in optional activities was about 20% lower than for compulsory activities, so making activities compulsory leads at least to higher engagement. How this translates to learning would be a matter for a deeper forum comment analysis, which is not doable at this scale. The comment analysis done for this evaluation uncovered evidence of co-learning, which again points to a success in meeting the objective of creating a learning community, but this data cannot easily be used to assess participants at an individual level.

The peer assessments were a highly useful driver for direct interactions between participants. The overall grade was effectively a peer validation of whether the contributions reached a satisfactory level, but the real value was in writing responses: ‘Doing the peer review’ was the highest rated activity with just under 85% strong or moderate agreements, topping course videos and discussion forums.

Benefits and Challenges:

MOOC platforms guide course designers towards using standardised quantitative assessment that might not be appropriate for all purposes. Our MOOC demonstrates that the platform we used can be used successfully for co-learning with formative peer assessment, while still providing the numerical data used by the MOOC platforms to decide on whether an individual has completed a course successfully.

The pedagogic design, however, needs to be developed carefully, and some creativity is required to configure the functionality in a way that allows learners to work effectively towards CPD learning objectives while providing the assessment data format required by the MOOC platform. In essence, participation levels can be monitored automatically by the platform, whereas content assessment is done by peers.

While the MOOC platform for our MOOC did not provide appropriate functionality to facilitate proper collaborative learning, most notably mechanisms to form and guide small groups at scale, the functions were sufficient to facilitate a good level of co-working for the benefit of participants, although tutor intervention is likely to be needed for such an approach.

The wide reach of MOOC platforms and their ability to draw in high numbers of participants make them an attractive delivery mechanism for CPD. Provided that future platform policies will not shut the door to working around largely automated assessment methods based on quizzes or formulas, and provided that platforms will allow for pedagogy-driven appropriate strategies for formatively assessing co-created outputs, qualitative descriptions, and localised interpretations of theory, CPD can run successfully at scale on these platforms.

Take-Aways:

Learning points, desired functionality for MOOC platforms, and details on the MOOC including the assessment methods can be found in the following open publications:

- Laurillard, D. (2014). *Anatomy of a MOOC for teacher CPD*. London: UCL Institute of Education, University College London. Retrieved from: http://www.iite.unesco.org/files/news/639194/Anatomy_of_a_MOOC.pdf
- Laurillard, D (2016). The educational problem that MOOCs could solve: Professional development for teachers of disadvantaged students. *Research in Learning Technology*, 24, April. Retrieved from: http://www.researchinlearningtechnology.net/index.php/rlt/article/view/29369