

# Creating a successful MOOC for academics in low-resource settings

## Lessons from running large-scale online courses in research writing

Over the last three years, enrolment on INASP's AuthorAID research-writing Massive Open Online Course (MOOC) has increased from 50 to over 3,000. Aimed at supporting early-career researchers in low- and middle-income countries to publish and communicate their work, the enthusiasm for this MOOC shows there is a clear demand for these skills.

**But can a MOOC build capacity and achieve impact in the long term? And, if so, what techniques have we learned from running our MOOC for academics in low-income settings that others can use and adapt?**

### Challenges facing early-career researchers

- Lack of research funding
- Difficulties writing in English
- Challenges in identifying the most suitable, genuine journal
- Delays with peer review and paper acceptance
- Publication costs
- Lack of mentors to check and review manuscripts
- Lack of familiarity with academic writing style<sup>1</sup>



Dr. Sahar Al-Bayatti, a specialist in animal science and genetics, collecting data from the field in Baghdad, Iraq

Researchers in low- and middle-income countries face multiple challenges in publishing their work in peer-reviewed journals. These include: knowing how to structure a research paper, finding the right journal and how to navigate the publishing and peer-review process. Established in 2007, INASP's AuthorAID project is a global network supporting researchers in low- and middle-income countries to publish and communicate their research.

One of the approaches that AuthorAID uses to build the skills of researchers is online learning, and most recently the use of Massive Open Online Courses (MOOC) in research writing. These were launched in 2015 following a pilot with two smaller online courses the year before. Since its launch, the AuthorAID research-writing MOOC has been run twice a year, and trained thousands of participants at a time. In 2017, the AuthorAID MOOC was a

**“Before the online training, I had carried out my fieldwork but had been unable to consolidate it into a report or publication. However, after the training I acquired confidence in writing and within two months, I was able to submit a manuscript. So far I have been able to publish two papers in peer refereed journals.”**

MOOC participant



finalist for a prestigious scholarly communication innovation award.<sup>2</sup>

The AuthorAID MOOC aims to help early-career researchers solve some of the challenges they face and our recent impact study shows that this approach is working.<sup>3</sup> Half of the 7,454 participants in our last four MOOCs completed the course, 36% of survey respondents had published a paper within one year of taking the course and most people who completed a MOOC reported an increase in confidence, a better understanding of the publishing process and more confidence in the quality of their writing.<sup>4</sup>

These impacts are a result of constantly developing and assessing the MOOCs we have

“...being in a group of people, even though you don’t see each other, you can ask them a question if you don’t understand somewhere, and they replied back...we were given some task of writing ... and then we marked each other’s papers and came up with recommendations – that was a great experience I had.”

Course participant,  
Tanzania



Bhuvanesh Kalal of India analysing different biomarkers on saliva and serum samples from autistic children

run over the last four years. Here we share our lessons on what makes an engaging and successful MOOC for developing country adult learners, so that others can learn and build upon this and move online learning in Africa and Asia forward.

## Lessons on teaching techniques for a successful MOOC

We’ve adapted our pedagogical approach according to teaching techniques in Randy Garrison’s ‘Community of Inquiry Model’,<sup>5</sup> which focuses on three ‘presences’:

- Friendly, open and responsive ‘teacher presence’
- Deeper learning of participants through ‘cognitive presence’
- Connected learning through ‘social presence’

## Friendly, open and responsive teacher presence

We made sure the teachers and facilitators were present and approachable throughout the course using:

- **Short, simple introductory videos** that helped participants get to know the personality of teachers and facilitators
- **Friendly weekly updates** with upcoming course content, average quiz scores and general encouragement and tips
- **A team of ‘guest’ facilitators on hand to answer questions** in the forums
- **An informal engagement style** that shows teachers are friendly and approachable
- **Recorded video discussions** using Google Hangouts

The guest facilitators play a critical role in the success of our MOOCs. Our guest facilitators are a geographically diverse mix of experienced AuthorAID mentors and associates, and highly engaged participants from previous MOOCs. The facilitator’s main role is to respond to the participants’ questions on the course forums and moderate discussions on hot topics such as research and publication ethics. Our feedback surveys have revealed that most participants get useful responses when they pose questions in our forums. This engaged teacher presence differentiates our course and contributes to the high completion rate.



## Deeper learning of participants though 'cognitive presence'

Keeping students engaged in course content can be tricky. However, in our last four MOOCs we have achieved an unusually high completion rate (just over 50%) in part due to using the following techniques to keep students interested:

- **Triggering deep learning through controversial topics.** We made the most of controversial topics on the course, such as research ethics, plagiarism, authorship, and 'predatory' journals. Content on these hot topics encouraged discussion and helped participants stay engaged.
- **Encouraging self-reflection through peer assessment.** We included peer assessment exercises to encourage self-

reflection and help put the learner in the shoes of the assessor. Feedback from participants shows how it helped them get perspectives from different cultures and to think deeper about how they approach the task and the course subjects.

## Connected learning through social presence

In previous online courses, our feedback surveys showed that most participants preferred learning with others rather than independent learning. We therefore make sure our MOOCs have plenty of opportunities to create a community of learners. We do this through:

- **Guest facilitators and peers engaging discussion.** Guest facilitators encouraged and engaged discussion in the forums. The diversity of experience between facilitators often meant that questions received more than one answer, and also encouraged responses from their peers on the course.
- **Focussed discussion through well-structured forums.** Rather than creating one big forum we opened a new sub-forum for each week (often gradually introduced) so participants could have more focussed discussions on the weekly topics.
- **Encouraging participants to introduce themselves,** to share their location on a 'pinboard map' of the world, and also via a 'research collaboration' forum.
- **Building social presence and affinity** via a photo competition that challenged them to share a picture in which they are carrying out their research.

We found the forum interaction on our MOOCs was very high compared to activity in other

MOOCs.<sup>6</sup> This unique aspect of our course helped us achieve our high completion rate - 80% of the participants who wrote at least one post went on to complete the course; compared to only 36% of participants who made zero posts in the forums. Creating a supportive teacher and peer-learning culture is vital to the success of our MOOCs.

## Choosing the right software

We use the open-source Moodle online learning platform with mostly low-bandwidth content (although we have introduced a limited amount of optional video content to supplement the material). We use eXeLearning, another open-source application, to create interactive, text-based content that can also be downloaded for viewing offline. Moodle comes with a wide range of tools to make learning activities, which we use to create discussion forums, multiple choice quizzes, peer assessment activities and surveys.

Google Hangouts is a great free platform for hosting and recording video discussions. Our participants come from across the globe (we've had participants from up to 100 different countries within one single MOOC). Broadcasting live content across multiple time zones is not always suitable, and live-streaming is not appropriate for the majority of our course participants who don't have access to a reliable internet connection. Instead, we record the discussions live and then share the recordings on the course, usually broken down into shorter, smaller videos. Google Hangouts works well for us but it is important to bear in mind that it does not work in all countries, such as China. Although videos have technical challenges, they are very well received by participants.

**"I think [the video discussion] was useful because it addressed and summarized the top questions that have been discussed in the forums these weeks. But mostly because it was nice to put faces and voices to some of the facilitators which gave me a sense of nearness."**

MOOC participant



## Challenges

We still face a few challenges in our MOOCs. These include:

- **Continuing to address inequalities.** Our recent study found that the completion rate is 52% for women - slightly higher than the overall completion rate for our MOOCs. However, the gender imbalance varies from region to region. In Sub Saharan Africa – where 53% of our participants are situated – the proportion of women completing the MOOCs is the poorest at 41%. Feedback also shows that while women have strong completion rates, their confidence and publication rate after the course is lower than male participants who completed the course. This shows the need to address wider contextual challenges as well as continuing to encourage more women to join and complete the MOOCs.
- **Ensuring quality peer assessment feedback.** Some participants give very detailed feedback to their peers and some do the minimum, or provide no feedback. We want to improve the overall quality of feedback and we are exploring ideas on how to achieve this.
- **Overcoming technical problems.** Moodle is not a commonly used MOOC platform and it is easy for technical issues to cause problems, especially in a course which has lots of settings and interactive activities, and where a small error can have a knock-on effect on a large number of learners.
- **Getting course feedback from non-completing participants.** Participants who complete the course are great at providing feedback but it is harder to get feedback from those who drop out. This makes it difficult for us to address the reasons they decided to leave the MOOC.



Recent course participant Dinesh Mohite coordinating focus group discussion with women equine self help group members in Uttar Pradesh, India

- **Making the course more accessible.** We have overcome barriers to mobile learning by integrating the latest course with the Moodle mobile app, which enables offline work. This is particularly useful for users in locations where internet connectivity is unreliable. However, the course is only currently available in English and Spanish, so we are looking to translate the courses into more languages such as French and Arabic.

## Sustainability

Our experience shows that MOOCs covering topics such as research writing can have a long-term impact on capacity development for early-career researchers if they address a specific audience need at the individual level, and if there is buy in and commitment at the institutional level.

For us, sustainability means handing over our online courses to institutions in low- and middle-income countries and supporting these institutions to run them with increasing confidence and reduced dependence on AuthorAID, while contextualizing the course content for their needs.

“...during the feedback and the comment-type things, I sometimes realised that my perspective is different from theirs. They have their one perspective based on their culture, their country, everything, and my perspective is different, on the other hand... When we interact with them we have some opportunity to learn out of the box.”

Course participant,  
Nepal





Kabita Karki in Nepal carrying out a highland flora survey in the rain

Embedding AuthorAID courses into at an institutional level is one way of achieving sustainability and long-term impact.<sup>7</sup> Our university partners in Sri Lanka, Tanzania and Vietnam have been running small AuthorAID online courses locally on their own Moodle sites since 2015. These online courses are part of broader blended research writing training established by the partners that also include face-to-face workshops, writing clubs and mentoring. Further, Dr Funmilayo Doherty, an Environmental toxicologist and lecturer at Yaba College of Technology, Nigeria, organized and ran a successful 'mini-MOOC' with funding from AuthorAID.<sup>8</sup> She went on to run a second, larger online course without an AuthorAID grant.

If individuals and institutions work together, MOOCs really can have long-term impact. A great example is our network of guest facilitators from all around the world who have made our MOOCs run smoothly and helped create an inclusive learning environment.

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## Next steps

In the future, we are keen to connect our online courses more closely to our online mentoring platform, so that course participants are able to find more tailored support and put the learning into practice.<sup>9</sup> By integrating capacity-development approaches we hope to strengthen the long-term impact of AuthorAID's goal to support research communication skills in low- and middle-income settings.

## Lessons on MOOCs for low- and middle-income settings with long-term impact

MOOCs in low- and middle-income countries can be successful and have long-term impact. To achieve this, they need to use the right content and engaging teaching techniques; have dedicated volunteers; meet the needs of a specific audience; and involve individuals and institutions working together.



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