Part 4: Why do we need a shared MOOC platform?

Our MOOC with Moodle by Mary Cooch(1), Helen Foster(2) and Eamon Costello.
Affiliation: (1) Moodle HQ, (2) National Institute for Digital Learning (NIDL), Dublin City University

Abstract
Moodle has widespread adoption in European higher education institutions as a virtual learning environment and has also been used to deploy MOOCs. This paper introduces Moodle in this context and provides a case study of a MOOC delivered through Moodle. During September 2013, the Teaching with Moodle MOOC run by Moodle HQ gave over nine thousand educators an introduction to Moodle. MOOCs have been increasing in popularity in recent years, but to Moodle’s founder, Martin Dougiamas the concept is not new: “Moodle.org has always been our MOOC”.

This paper covers the pedagogical model that the Teaching with Moodle MOOC is based on, describing activities used in the course, levels of participation, problems encountered and lessons learned. It is not a technical paper, but instead focuses on the MOOC from the facilitator and participant point of view.

About Moodle
Moodle is an open source Learning Platform (also known as a Learning Management System or a Virtual Learning Environment), provided under the GNU public license. Now twelve years old, it is the platform of choice in over 200 countries with more than 70 million users worldwide. Anyone can use, extend or modify Moodle for both commercial and non-commercial projects without any licensing fees. Supported by a global network of certified Moodle Partners, Moodle HQ works with developers and educators worldwide to support a fast-growing community of Moodle users.

Moodle and MOOCs
Moodle is also being widely used as a MOOC platform. The history of the MOOC is held to have started in the Connectivism and Connective Knowledge MOOC which was run during 2008 at the University of Manitoba by George Siemens and Stephen Downes. This original MOOC was based around Moodle (Mackness et. al., 2010), however it employed what Downes (2008) terms a connectivist approach whereby the learning space was encouraged to sprout beyond the VLE and seamlessly permeate other networks such as blogs, wikis, facebook, Second Life, email lists and twitter.

As MOOCs mainstreamed dedicated MOOC platforms such as EdEx (open source) Coursera and Udacity (both proprietary) appeared. The Open2Study (x)MOOC platform launched in March 2013, was developed by the Open Universities Australia (OAU), based on Moodle and Drupal (Hartnett et al, 2014). Open2Study provides MOOC courses from 10 Australian Universities, with a handful of
other international partners, and has reported over 600,000 student enrolments. Moodle also appears to be a popular choice of self-hosted MOOC platform. An examination of the homepages and HTML source code of MOOCs in the OpenUpEd MOOC portal revealed several based on Moodle from institutions such as: The Open University of Israel; Slovak University of Technology in Bratislava; Kaunas University of technology; Moscow State University of Economics, Statistics and Informatics (MESI) and the UK Open University (which also later developed its own FutureLearn platform).

A comprehensive picture of the status of “home grown” MOOC initiatives is difficult to discern i.e. those created by institutions using their own LMS/VLE infrastructure and not one of the main commercial platforms such as EdEx or Coursera, but a scoping literature search shows various evidence such as a Romanian initiative for a national platform based on Moodle (Mustea et al, 2014); small scale Moocs in Ireland (IT Sligo with 1,270 users) (Mulligan et al, 2014) and the UK (Warwick with circa 600 users) (Sinclair et al, 2014) and some reasonably large small MOOCs such as from University of Goce Delcev (4,000 - 5000 users) (Kocaleva et al, 2014).

Moodle allows institutions to experiment with MOOCs without incurring the large costs associated with many major MOOC platforms and enabling them to leverage their expertise in their existing educational infrastructure. Moodle is widely deployed in European educational institutions. Although information is difficult to gather data is available from institutions who have opted-in to being part of Moodle site deployments statistics gathered by Moodle.org (2014). As of November 2014 there are several European countries in the top 20 countries by Moodle deployments worldwide including Italy, Germany, Poland, the United Kingdom and Spain, which has 4,763 declared Moodle sites, being second only to the US. The open source licensing model which lowers costs of Moodle may be an important factor in its adoption and also its strong support community. What may be of particular relevance here, in the European context, is its strong support for language localisation.

In spite of the success and widespread use of Moodle as a large scale learning platform perceptions still exists, stoked perhaps by commercial MOOC interests, that Moodle is not suitable for running courses with large numbers of users (Sánchez Gordón, & Luján Mora, 2014). This paper aims to help dispel such perceptions by providing a detailed case study of how a MOOC in Moodle was implemented and how the features of the platform can be used at scale to realise rich, socially predicated learning scenarios.
The Teaching with Moodle MOOC

Teaching with Moodle: An Introduction was hosted on a Moodle site - Learn Moodle - designed and developed by Moodle HQ in order to deliver MOOCs.

The MOOC ran for 4 weeks. Anyone who wished to view the course for interest but not actually participate was welcome to do so. 9,522 people from over 150 countries around the world chose to sign up and enrol in the course.

Although the MOOC was delivered in English, participants were encouraged to post in forums and enter data in other activities in their own language. The Moodle interface is translated into over 100 languages and participants could select their own language in their profile. 53 different languages were selected by participants.

As described in Why a Moodle MOOC? by Moodle’s founder Martin Dougiamas, one of the main reasons for running a MOOC was to show teachers what Moodle is, and to enable them to experience the activities as a student. A side benefit was to demonstrate that Moodle could scale to any size, and could cope with an enormous number of active users and many hundreds of courses.

Live teaching sessions took place weekly, and teaching resources (text and video) were also available to participants. However, the MOOC’s strength lay not in its static content but in its social constructionist nature, with participants connecting with each other and learning by creating content rather than consuming it.

Moodle and social constructionism

Moodle’s founder, Martin Dougiamas, began developing Moodle as part of a PhD project Improving the effectiveness of tools for Internet based education. From the start, Moodle’s design and development has been guided by a social constructionist pedagogy. Moodle uses constructionist referents to model engagement of the participants with the content and each other. Five referents, as outlined in the Moodle documentation: Pedagogy, are the guiding concepts for building communities of learners and as such formed the basis of the activities used in the MOOC.

“All of us are potential teachers as well as learners - in a true collaborative environment we are both”

Forums

The Moodle forum activity enabled total newcomers to ask questions of those slightly more experienced, and participants freely shared what they had learned and made suggestions for improvement to others. While the vast majority of posts were in English, forum discussions in other languages soon took off, providing support to those whose English was less proficient.

Despite their value in collaborative learning, there were some issues with the management of forums. Newcomers to Moodle were frustrated by the volume of forum notification emails and struggled with searching through forum posts; newcomers and experienced users alike bemoaned the inability to subscribe to just one forum thread; and from a facilitator’s perspective, it would have
been nice to have had the option to keep particular discussions at the top of the board (‘sticky’) and to be able to close a discussion i.e. prevent further replies. Granting users a finer level of control over discussions, such as allowing them subscribe to just one forum thread was later developed as a new feature of Moodle (version 2.8) which gives an example of how MOOCs can be used to innovate pedagogy.

The questions and answers forum

Two weeks into the course, the suggestion was made to enable ratings in the forums, allowing participants to provide additional feedback for posters. Participants could rate posts in the Questions and answers forum as ‘Helpful suggestion’ or ‘Solved my problem’. Posts in the Share your good ideas forum could be rated as ‘Interesting idea’ or ‘Will definitely use this idea’. All rating options were positive and more descriptive than a simple ‘Like’.

Over 15,000 forum posts were made during the four weeks of the course.
Workshop

A Moodle workshop allows for self and peer assessment. Bearing in mind the time and language constraints, very straightforward instructions were provided for the task, with an equally straightforward grading rubric. Participants had to write three sentences describing their home country and include a picture and link to the Wikipedia page about their country.

A workshop submission

After the submission deadline, participants received five submissions from other participants to assess.
A workshop assessment

The aim was both to provide an opportunity for participants to experience a Moodle workshop from a student perspective and also to have an insight into Moodle’s grading process.

The deadline set for submissions proved problematic for people signing up for the course late and so the workshop phases had to be changed manually several times in order to allow participants both to make a submission and to peer assess others.

The workshop activity was available during the third week of the course, with assessment of submissions taking place in week 4. Workshop submissions totalled 1116, with 789 assessments being completed.

Many of the activities in Moodle are designed to allow participants to add and edit common content. Two activities in the course - the glossary and database - required participants to contribute, respectively, a key educational term from their country and a favourite national recipe. In so doing,
participants were not only learning about how these activities worked in Moodle but they were also teaching others aspects of their own country and cultures. This connects also with the second referent.

“We learn particularly well from the act of creating or expressing something for others to see”

Glossary

Another participatory tool available in Moodle is the Glossary. Participants could add as many entries as they wished to the Terms used in teaching glossary, and could also comment on others’ entries. Glossary entries were given value by being displayed on the course page via a random glossary entry block, with a different entry displayed each time the page was refreshed. A further way that glossary entries were given value was by having them automatically hyperlinked to elsewhere in the course where the word was used (using the glossary auto-linking filter). However, this feature caused some annoyance with hyperlinks within words (e.g. ‘ID’ within ‘provide’ was auto-linked) until the auto-linking filter was restricted to match whole words and made case sensitive.

1350 glossary entries were made during the four weeks of the course.
Database

As with the glossary, participants could add entries to a database activity, and also rate and comment on others’ entries.

1070 database entries were made during the four weeks of the course.
Lessons learned from the Moodle wiki activity highlighted that tasks need to be very clearly explained and explicit instructions given to participants were around the use of this tool. It may also have been impacted by technical issues with several participants trying to edit at the same time.

Nevertheless, 630 edits to the first page of the wiki were made and around 250 new pages were created during the four weeks of the course.

**Practice courses**

Each participant had two parts to their learning: a collaborative aspect in the main course *Teaching with Moodle* and their own practice (sandbox) course. A *course* in Moodle is a learning space typically used by a tutor with a class, for either remote or blended learning. Tasks were set each
week for the participants to try out in their own course. As their courses developed, participants were asked to share the link to their course so others could go in and review them. Participants were encouraged to use OER resources in their own practice course and those who felt their content was of sufficient quality were encouraged to share their courses with others on Moodle.net.

Having their own course to practice in was seen by participants as a valuable element of the MOOC, although being able to enrol other users manually as students into a course did result in one participant accidentally enrolling all users on the site into their course, causing confusion when unexpected email notifications were received. However, people were generously prepared to forgive and forget after an apology from that participant and everyone was unenrolled. From then on manual enrolment was disabled.

2646 practice courses were requested and set up for participants during the four weeks of the course.

“We learn a lot by just observing the activity of our peers”

The participants page allowed everyone to see their fellow participants in the course with links to everyone’s profiles.

<table>
<thead>
<tr>
<th>Teaching with Moodle</th>
<th>Visible groups</th>
<th>Inactive for more than</th>
<th>User list</th>
</tr>
</thead>
<tbody>
<tr>
<td>All participants</td>
<td></td>
<td>1 days</td>
<td>Brief</td>
</tr>
</tbody>
</table>

All participants: 8498

<table>
<thead>
<tr>
<th>User picture</th>
<th>First name / Surname</th>
<th>City/town</th>
<th>Country</th>
<th>Last access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Víctor Hugo Chávez Marín</td>
<td>Pucallpa</td>
<td>Peru</td>
<td>5 days 3 hours</td>
<td></td>
</tr>
<tr>
<td>Αλέξανδρος Νικολάου</td>
<td>Karδίσα</td>
<td>Greece</td>
<td>5 days 7 hours</td>
<td></td>
</tr>
<tr>
<td>Wahyu Purnomo</td>
<td>Malang</td>
<td>Indonesia</td>
<td>6 days 9 hours</td>
<td></td>
</tr>
<tr>
<td>高文双</td>
<td>beijing</td>
<td>China</td>
<td>7 days 16 hours</td>
<td></td>
</tr>
<tr>
<td>Helena Jaeger</td>
<td>Flop</td>
<td>Brazil</td>
<td>7 days 22 hours</td>
<td></td>
</tr>
<tr>
<td>Jose Valiente</td>
<td>Madrid</td>
<td>Spain</td>
<td>8 days 3 hours</td>
<td></td>
</tr>
</tbody>
</table>

Teaching with Moodle course participants
Using a Moodle site to actually teach learners about Moodle meant that their every experience was a learning one - reading forum posts, looking at the glossary and database entries and courses of others and seeing how other aspects of Moodle worked - blocks, email and messaging notifications and so on.

“By understanding the contexts of others, we can teach in a more transformational way (constructivism)”

When MOOC participants first joined the course they were given an introductory task as their first forum post of the course to provide some information about themselves.

```
Come and introduce yourself and get to know each other before the course opens on 1st September 2013.
Activities in this course are in English; however, you are welcome to post in your own language 😊.

Add a new discussion topic
```

<table>
<thead>
<tr>
<th>Discussion</th>
<th>Started by</th>
<th>Replies</th>
<th>Unread</th>
<th>Last post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coming from Hanover</td>
<td>Sebastian Becker</td>
<td>1</td>
<td>0</td>
<td>Wed, 21 Aug 2013, 8:39 PM</td>
</tr>
<tr>
<td>Greetings from Italy</td>
<td>Fabio Manuppella</td>
<td>0</td>
<td>0</td>
<td>Wed, 21 Aug 2013, 8:36 PM</td>
</tr>
<tr>
<td>Hello</td>
<td>Ashley Mason</td>
<td>0</td>
<td>0</td>
<td>Wed, 21 Aug 2013, 8:36 PM</td>
</tr>
<tr>
<td>A bit about me ...</td>
<td>Alison Blair</td>
<td>2</td>
<td>0</td>
<td>Wed, 21 Aug 2013, 8:33 PM</td>
</tr>
<tr>
<td>Representing New Zealand</td>
<td>Carter Voyce</td>
<td>2</td>
<td>0</td>
<td>Wed, 21 Aug 2013, 8:18 PM</td>
</tr>
<tr>
<td>Some information</td>
<td>Birgid Schiind</td>
<td>4</td>
<td>0</td>
<td>Wed, 21 Aug 2013, 8:13 PM</td>
</tr>
</tbody>
</table>

**Forum: Introduce yourself!**

Participants could also edit their profiles, adding a photo, description, interest tags etc. and view the profiles of others.
Mary Cooch

I am happy to be the course facilitator for Teaching with Moodle: An Introduction. I’ve been a teacher since 1985 and in latter years have begun working with educators globally to make the most of Moodle. I blog and write books about Moodle, and I help ensure the Moodle documentation is up to date for every new version of Moodle that comes out. I’m also the "virtual" Principal of Mount Orange. Moodle’s School demo site which provides courses with real user data you can explore.

Country: United Kingdom
City/town: Preston
Course profiles: Teaching with Moodle: An Introduction, Practice course, curso de prueba, Information Literacy in Life Sciences, Cats Vs Dogs, A scuola tra le nuvole, TK test course, The Robot Helps
First access: Monday, 1 July 2013, 11:16 AM (1 year 141 days)
Last access: Sunday, 26 October 2014, 2:02 PM (24 days 4 hours)
Interests: Cats, French

A participant’s profile page

Cats

Remove "Cats" from my interests

Related tags: reading, elearning, Moodle, teaching

Users tagged with "Cats": 11

Helen Foster  Mary Cooch  Ekaterina Rogozhkina  Michael Spall

An interest tag page
Blogs

Participants were encouraged to write blogs, either in Moodle or on their usual blogging platform, such as Blogger or Wordpress, as a way of sharing thoughts in a public but reflective way. Others could then give comments on the blog posts.

Over 700 blog posts were made and around 700 comments were added to blog posts, glossary and database entries during the four weeks of the course.

Surveys

Two survey activities - ATTLS (Attitudes to Thinking and Learning Survey) and COLLES (Constructivist On-Line Learning Environment Survey) - were included in the course for gathering data from
participants to help learn about them, and in particular to determine how well participants felt the course matched their own learning styles, and to reflect on the teaching.

2221 participants completed the ATTLS survey and 1088 participants completed the COLLES survey.

**Attitudes Towards Thinking and Learning**

**Attitudes to Thinking and Learning Survey**

**ATLS results summary**
ATLS Connected learning results

ATLS Separate learning results
This is designed to help you reflect on your participation with others in the course. All questions are required and must be answered.

Relevance

Responses

In this online unit...

1. I prefer that my learning focuses on issues that interest me.
2. I found that my learning focuses on issues that interest me.
3. I prefer that what I learn is important for my professional practice.
4. I found that what I learn is important for my professional practice.
5. I prefer that I learn how to improve my professional practice.
6. I found that I learn how to improve my professional practice.
7. I prefer that what I learn connects well with my professional practice.
8. I found that what I learn connects well with my professional practice.

Constructivist On-Line Learning Environment Survey

Survey: COLLES

COLLES report
“A learning environment needs to be flexible and adaptable, so that it can quickly respond to the needs of the participants within it”

Moodle’s design made it easy to modify the course page during the MOOC without disrupting the participants’ experience of it. Content could be dragged and dropped into different locations and extra activities added with a couple of clicks.

The weekly live hangout was adapted according to events of the week and feedback from participants. There was a mix of reflection on the previous week, teaching for the week’s tasks and highlighting a hot topic, based on the week’s activity.

Feedback

A feedback activity was used after the first week to gauge participants’ initial impressions. Comments made were acted upon in subsequent weeks.

Feedback: Week 1

A final feedback activity at the end of the course gave overwhelmingly positive results, with 92% of participants rating the MOOC as ‘outstanding’ or ‘good’. The course had been designed for teachers new to Moodle and 87% felt it was pitched at ‘just the right level’. Participant remarks included for example:
“Moodle is no longer a monster”,
“my confidence with Moodle is hugely enhanced”
“great example of a Moodle course - best practice in action”.

1964 participants submitted feedback in week 1; 896 participants submitted feedback in week 4.

Choice

The choice activity was used in the first week of the course to gauge the level of prior knowledge of Moodle. The course was for total beginners but experienced Moodle users were welcome to help mentor newcomers.

29% of participants classed themselves as complete beginners, while 49% had “some experience with Moodle” and 3% classed themselves as very experienced users. When asked if they had used another learning platform, 55% of participants said no and 45% said yes. Of those who said yes, 41% had experience of Blackboard.

Another choice activity in week 3 asked participants for help in deciding what to do with a forum set to separate groups (where each group could only see posts from other members of their group). Problems arose with the forum when only one member of the group was still active in the course. Newly enrolled course participants were manually added to these groups but in a showcase instance of social constructionism, one participant began a forum discussion “Alone in your group?” encouraging participants whose other group members were inactive to join their discussion.

Choice: Help us decide what to do with the Teach the group forum

Recognition of participation and course completion

It was decided to award badges for participation and completion of the MOOC. Mozilla Open Badges give recognition for achievements, are integrated with Moodle and are a popular way of motivating students.

The Learn Moodle participant badge was relatively easy to obtain whereas the Learn Moodle completer badge was only for the most committed participants.
We did not display the completer badge until very late in the course to be sure everything was correct. This had the added bonus of keeping participants in suspense about what they needed to do precisely to gain the elusive badge!

<table>
<thead>
<tr>
<th>Badge name</th>
<th>Criteria</th>
<th>Number awarded</th>
<th>Percentage of total enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn Moodle participant 2013</td>
<td>Awarded to people who have participated in the course by posting in ANY of the 5 forums in the course</td>
<td>3,236</td>
<td>34%</td>
</tr>
<tr>
<td>Learn Moodle completer 2013</td>
<td>Awarded to people who have completed ALL 33 activities in the course</td>
<td>638</td>
<td>7%</td>
</tr>
</tbody>
</table>

**Discussion**

Several lessons can be drawn from the case study presented here. As are to be expected in any richly participatory large scale educational enterprise challenges arose during the course. The Moodle platform proved versatile at coping with issues as they happened. This may be in part attributed to the high level of expertise of the teachers and other accounts of teaching practice in Moodle based MOOCs would help provide greater context here. The Moodle platform also proved scalable to large numbers of simultaneous users. Although the level of participants did not reach those of some of the largest MOOCs there is other evidence of Moodle being deployed at large scale such as by the UK Open University (Sclater, 2008) and the Moodle.org community itself runs on Moodle. Of particular note for example should be the feature that allowed participants to develop their own sandboxed courses.

A third (34%) of the 9,522 users completed the Track A of the course earning a participant badge. These students persisted until the end of the four weeks and 7% went on to complete all activities and earn the more elusive completer badge. The 30% completion for Track A is high compared with MOOC persistence rates (Jordan, 2014). We speculate that the high participatory nature of the course activities may have helped contribute to this by keeping learners engaged. Unlike most MOOCs however this MOOC is not linked to a formal University course of study and in general emphasized the learning of more practical than theoretical skills. The use of open badges to gamify the course may also have had an effect as such mechanisms can increase persistence.

The MOOC demonstrated that Moodle has several tools that are useful for deploying participatory pedagogies at scale. Under the five social constructivist principles outlined here were shown examples of participants engaging in peer teaching and co-constructing knowledge in a variety of ways. Learners engaged in activities using tools which are specifically designed for peer learning such
the Moodle Wiki, Database, Glossary and Workshop, all of which allow participants to co-create knowledge and provide opportunities to grade and comment on each other’s learning. Learning activities using these tools can be designed to run with limited levels of teacher input which is a key premise of MOOCs. It may not be apparent to some that virtual learning environments that are in widespread deployment, such as demonstrated here in the case of Moodle, have sophisticated capabilities for delivering MOOC pedagogies. Some commentary on the limitations of LMS/VLEs as MOOC platforms relative to dedicated MOOC platforms may be flawed in this regard.

One of Moodle’s strengths is its availability as an open platform. The cost of deploying Moodle is low relative to commercial alternatives. Moreover Moodle is situated in a large and innovative community spread throughout the world and is particularly strong in Europe for example. Moodle has its own OER hub (Moodle.net) where resources at the course level can be shared amongst educators. Moodle.net could be used for example to share courses under a license that enabled their adaptation and modification to local contexts. The ability to localize Moodle for example was one of the determinants of its early adoption in Europe and elsewhere (Costello, 2013). There is no comparably sophisticated localization infrastructure in existing MOOC platforms and consequently much energy is being expended in an area, where it is arguable, robust solutions already exist.

The future of MOOCs is uncertain. They appear to be here to stay but much has yet to be decided and the rapid innovations in the area show no sign of abating yet. It may be that a convergence of LMS/VLE and MOOC platforms occurs. MOOC platforms might enter the VLE/LMS space but equally mechanisms of leveraging existing courses run on VLEs/LMses into MOOCs more effectively are also inevitable.
Conclusion

In this paper, we have focused on the pedagogical approach and have aimed to show how a MOOC can be successfully run on a large scale using the social constructionist model which underpins the development of Moodle. We have taken five key referents and outlined how they guided the design and implementation of the Teaching with Moodle course.

The organisation of the MOOC, with a common course for everyone using social constructionist-based activities, together with individual sandbox courses meant that participants had the opportunity not only to discover, create and learn on their own but also to share this learning, collaborate, assist and assess their peers. Feedback at the end of the MOOC suggests that this approach proved very successful with newcomers in building confidence and understanding of how to use Moodle for teaching. As one participant commented: “This has been a very well organised MOOC - certainly one of the best I've attended”. Moodle, as illustrated here, is a capable MOOC platform and it is argued provides an open platform, aligned with European initiatives such as OpenUpEd.

References


Sclater, N. (2008). Large-scale open source e-learning systems at the Open


Useful links

- Moodle.org - Moodle community home
- Learn.moodle.net - the official Moodle site for delivering MOOCs
- Why a Moodle MOOC? by Martin Dougiamas, Founder and Lead Developer
- Improving the effectiveness of tools for Internet based education Dougiamas, 2000
- Moodle documentation
- Mozilla Open badges