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Gundeea Seeruttun Narrainen

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Customisation of the first Mauritian MOOC: aligning with Challenges of the Modern World for Education and Knowledge Management

Gundeea Seeruttun Narrainen

Abstract

The MOOC, Massive Open Online Course, is present in our landscape since 2008. The objective of such courses is to train a maximum of students via an online platform which requires an access to internet, motivation and willingness from the participant.

Teaching requires organisation. With more and more courses being offered online teachers are constantly being asked to change their teaching style. Thus the organisation as well as the monitoring of students is changing. Online courses have taken another turn with the innovation, which are the MOOCs. MOOCs are non-fee paying courses, delivered mostly by recognised universities, course organisation and management was bound to change.

By default MOOC courses are offered over a period of 1 to 1 and a half month, by course providers allowing courses to be hosted on their platforms, learning resources are often in the form of video lectures. Interactions with tutors are either synchronous or asynchronous. The appropriate evaluation mode for the high number of registered users for this type of course, is often the peer to peer evaluation. Another form of evaluation is the online quiz either assessed automatically or assessed by the system.

With less than 10% successful completion rate for MOOC courses, Jordan 2013, and keeping in mind the Mauritian context, the Open University of Mauritius decided to offer a personalised MOOC, which could be referred to as a HOOC. A HOOC is defined by the literature as Hybrid Open Online Courses. By hybrid Daniel Peraya suggests blended courses that is online training and face-to-face sessions. It would be more a question of tutoring and guiding students rather than teaching them.

Keywords: course management, customization, high-scale education, HOOC, MOOC, MOODLE, innovation
Introduction

MOOCs are considered as a trend by some and for others it is an innovation in distance teaching and learning. When distance learning was launched there was a specific type of organisation around the way distance learning is conducted. Distance learning systems comprises of ‘planning, organizing, leading, and controlling… institutional framework and the funding system… three major subsystems, the material subsystem involving production of materials, the service subsystem of support for students, and the administrative subsystem for management of tutors’, United Nations Educational, Scientific, and Cultural Organization, Paris (France) 1992.

MOOCs are an extension of distance learning with changing parameters. The planning phases are the same for both distance learning and MOOCs, for MOOCs production of material is different as it is mainly focused on video lectures, support of students are done mainly by tutors or peers and administration takes place only if the participant wants a certification.

Technology-based training emerged as early the 1960s and was complementary to instructor-led education on workstations and mini-computers. Internet technology made possible the first fully online university accredited course. This accreditation could be obtained from the US Jones International University in 1996. From the year 2000 to 2008 registration for distance education courses was on the rise for both developed and developing countries. Distance learning as a self-instruction mode of learning was not enough and teachers and institutions decided to opt for blended learning that is a mix of online courses and on campus sessions.Blended is also called hybrid. Like distance learning when MOOCs emerged in 2008, it was courses offered to a mass of students and totally online. With the poor percentage of users successfully completing the different courses some institutions decided to offer blended MOOCs, which are now called HOOCs.

A hybrid course has the following main characteristics:

- Participants are not mere listeners and passive participants but are actors of their learning
- There are more interactions that take place in such teaching methods in terms of students and tutors, peer to peer, between student and course content and between students and external resources.
- Integrated evaluation mechanism targeted towards students and teachers

Our main objective is to try to show the effectiveness of a HOOC in terms of organisation and course structure. The methods used in this paper are: a survey questionnaire, interviews of 2 facilitators and 2 students and observation. What we have observed is that the fact that this course has been organised in a blended mode has helped the participants to reach the end of the training, participants felt more motivated by the course as they did not have a sense of loss in the mass community of students, they tend to say that they had an identity, and once students had the experience of a platform be it MOODLE or a MOOC platform then the massive aspect of the course did not matter.
Literature review of customisation and hybrid MOOCs

Customisation of the course has been undertaken by the OUM by two aspects: first the organisation of on campus presentations, facilitation sessions and second a MOODLE platform which acted as a support to the existing course on the Coursera platform.

Since the first MOOC had been launched, what can be seen in the landscape of distance learning is that MOOCs are taking different forms. We came across cMoocs, xMoocs, HOOCs and more and more MOOCs are being customised and defined as ‘hybrid’. Such existing MOOCs will be discussed in the following paragraphs.

Description of the EDCMOOC

The Coursera MOOC E-Learning and Digital Cultures (EDCMOOC) was launched in 2013, and was offered on a period of 5 weeks. This course is described as ‘an "xMOOC" platform, with teacher-defined structure, content, and assignments, EDCMOOC had a social, non-hierarchical approach to the process of the MOOC itself.’ Waite, Mackness, Roberts, & Lovegrove, 2013 have described the EDCMOOC a "hybrid" MOOC. Usually a hybrid MOOC is defined as such as it cannot ‘neatly fit the categories of cMOOC or xMOOC’, but where MOOC categories are concerned we have to be careful as these categories are often ‘oversimplified and require critical attention’, Ross J., Sinclair C., Knox J., Bayne S., Macleod H., 2014.

This MOOC ‘engaged participants with some discourses that inform understandings of the digital in education and popular culture – particularly utopian and dystopian narratives, and affirmations of and challenges to the notion of the human.’ Teaching was delivered to students ‘through a teacher-curated and -annotated selection of resources on weekly themes, including short films, open-access academic papers, media reports, and video resources.’ The weekly activities were discussion forums on the Coursera platform, ‘blogging, tweeting, an image competition, commenting on digital artefacts created by EDCMOOC teaching assistants, and two Google Hangouts. The Google hangouts was used as a platform for the course team to reply to current discussions, emphasis was laid on learner-led group formation, and social media was used. For this course the sole mode of assessment was the creation a multimodal, web-based digital artefact. This artefact could grant a "statement of accomplishment" to the participants. 3 peers reviewed this assignment. Even a distinction could be obtained if the participants excelled for the assignment and the artefact they submitted ‘exceeded a certain mark threshold’. This EDCMOOC contained no quizzes or tests and no pre-defined learning objectives, Ross J., Sinclair C., Knox J., Bayne S., Macleod H., 2014.

The eFAN-Maths MOOC

The eFAN MOOC « Enseigner et Former Avec le Numérique » hosted by Cahan and Lyon Universitessunder the direction of Eric Bruillard paved the way for the eFAN-Maths MOOC, which materialised between April and June 2014. The number of enrolled students for this course amounted to 10000 approximately. Participants were active in the sense that they participated in the proposals for education projects submissions which was the sole assessment of this course. Participants were not mere listeners and information grabbers but
were involved in true interactions which changed the students role to designers of teaching and learning.

The eFAN Maths MOOC, Mathematics Teaching and Training with ICT, « Enseigner et Former Avec le Numérique en Mathématiques ». This project had been driven under the responsibility of Ghislaine Gueudet and comprised of the following institutions : the same ‘ ENS’ as for the MOOC eFAN, the ‘IFÉ’, the ‘IREM’ network (‘Instituts de Recherche sur l'Enseignement des Mathématiques’), the ‘ESPE’ network, and research groups. This course had a duration of 5 weeks and started on the 17th November 2014.

On the 27th of November, more than 3000 participants had registered, from various countries (Belgium, Haïti, Polynésie Française, Maroc, Turquie, Arabie Saoudite, Sénégal, Chili, Mexique and from different parts of France. Participants had also various job description such as primary school teachers, secondary school teachers, students from master programmes, or those preparing for a PGCE (Postgraduate Certificate in Education) programme equivalent to the training for teachers of primary and secondary schools.

The MOOC had a MOODLE platform as support for participants to upload their projects but no other information has been obtained concerning the use of the MOODLE platform. Only available is a screen capture of how the MOODLE platform was set up.

Course structure:

The course description is as follows:

- Week 0 : the ‘Pre-MOOC’ was based on the introduction of the course and the introduction of submissions of projects
- Week 1 : tools gallery, usability gallery, mathematics in a pedagogical perspective
- Week 2 : Analysis of mathematics tasks, analysis of students activities using a ‘grille « élève », » student’s check list.
- Week 3 : analysis of start up in class, analysis of teacher’s role. Working on the projects.
Week 4 : reflection on the pooling of projects, evaluation and evolution of resources. Working on the projects.

Each week participants could view a video. This video included a recap of the previous week’s activities, the new activities of the week were introduced, these new activities were wrapped around a course in a video course material. Activities comprised of tools, discussions and documents and tips to go deeper in the learning process. A quiz inline with what has been done during the week closed a week’s session.

Participants could engage at different levels for this course: follow the videos and do some activities, undertake all the assignments required by the course, propose a project and complete it, the MOOC could be follow by groups thus diminishing the engagement time for each participant and encouraging co-education and mutual support.

Submission of a final project after four weeks granted a certificate of participation to the participant for the eFAN MOOC. A final quiz is proposed by the FUN platform and 70% good answers granted a statement of accomplishment.

Brief analysis of the eFAN Maths course

Some participants regretted the choice of the conceptors of offering only an elementary course for mathematics. Other students talked about the complexity of using the MOOC platform and the MOODLE platform. Still it is to be noted that this course had 3200 registered users, with 150 projects submitted. Some projects had been submitted by an individual and could thus be used to form groups. The platform dedicated to projects remained open for projects submissions till 2015.

Stanford Machine Learning MOOC

The Stanford MOOC is a ten weeks course launched in 2012. It happened to coincide with the Vanderbilt beginning of semester. The MOOC ended but there was still 4 weeks for the semester to be over and for students to apply what they have learned. Fisher who decided to include the MOOC course in his traditional classes introduced some topics which were not in line with the MOOC course but which he thought important for the Vanderbilt context. The teacher ‘wrapped’ his course around an existing MOOC and this put into light a new version of the ‘flipped classroom’, making use of video lectures, automatically graded quizzes and programming assignments available on the MOOC platform . On campus sessions were focused on ‘interactive discussions’ and ‘more challenging material’ Derek O. Bruff, Douglas H. Fisher, Kathryn E. McEwen, Blaine E. Smith, 2013.

Brief analysis of the course

The students reacted enthusiastically to this proposed combination of MOOC and on campus course. They found the video lectures have been designed successfully. They thought that the MOOC is appropriate as a self-paced learning option. Their interaction was done locally rather than through the online community. Students had issues in incorporating the online and on campus mechanisms of the course.
The Context
The Open University of Mauritius offered the Emerging Trends & Technologies in the Virtual K-12 Classroom in collaboration with the University of California Irvine, the Education USA office and the U.S embassy of Mauritius in December 2013.

December was an appropriate timeframe to offer this course as in Mauritius teachers are on holidays and more incline to follow new courses offered. This project started in October 2013 and was up and running in December 2013. Thanks to the main facilitator who had been approached by the American Embassy found in Mauritius Island and the willingness of the Director of the Open University of Mauritius to launch an innovative way of teaching. For him the MOOC is ‘a trend and can add value to open online courses’. This project had been materialized in 3 months. Before launching such a course in parallel to the Coursera course much work had to be done, as this is where the organisational aspects are crucial for the success of such an educational project. The main facilitator did not want to launch the course, as a default MOOC course would run. Instead she wanted a much more personalized MOOC and more important an institutionalised one.

We will thus, first begin by explaining how the course Emerging Trends & Technologies in the Virtual K-12 Classroom has been organised by Coursera. Then we will give details about the course management undertaken locally by the Open University of Mauritius in parallel as a support to the existing course found on Coursera.

Before we begin with the course description we will briefly introduce the Coursera MOOC platform. Coursera is an education platform that partners with top universities and organizations worldwide, to offer courses online for anyone to take, for free’.

The Emerging Trends & Technologies in the virtual k-12 classroom course is part of the ‘Virtual Teaching program’ specialization offered to teachers in the United States. In an effort to open education in the third World countries, the United States had the mission to build up learning hubs by promoting education through MOOCs. The MOOC seemed to be the solution as it was free of charge and had a diversity of courses, which could suit a large audience. Most of these courses did not need any prior prerequisites.

Description of the course on Coursera platform

This Coursera course was targeted for teaching working with children of 5 to 18 years old. The course objective was to show to teachers how they could make use of technologies in order to enhance student’s learning. The course duration is of 5 weeks and covers the following topics:

Week 1: Role of Technology in the Virtual Classroom
Week 2: Emerging Trends and Technologies: Social Learning

1https://www.coursera.org/about/
The course comprised of:

- Video lectures which are released at the launching of the course on a specific date. All videos are available for consultation during the duration of the course. These videos are also available on YouTube as a standalone video lecture for viewing by anybody.

- Lecturers slides and notes derived from video lectures

- Weekly announcements from the instructor

- Discussion forums

- An assignment graded by Peers

- Peer assessment of 3 classmates

- 4 weekly quizzes comprising of 5 multiple choice questions

- A final quiz comprising of 35 multiple choice questions

- Weekly readings

- Completing pre-course and pot-course surveys

- Sample of a week on the Coursera platform:
Coursera evaluation consisting of assessments:

- There are three types of assessments
  1. Four five-question multiple-choice quizzes, each quiz can be done three times and the student is shown what was wrong each time the quiz is completed.
  2. One written assignment of 1500 words, where the student designs and justifies a learning activity in educational technology. (3 peers grade each assignment)
  3. A final quiz of 35 multiple choice questions can be done three times. No students feedback on their wrong answers is available after each take.

Description of the course devised by the Open University of Mauritius in the following terms:

- Open registration to all primary and secondary teachers of Mauritius
- Sorting of eligible participants for the course
- Organisation of 6 face to face sessions as follows:

<table>
<thead>
<tr>
<th>Face to face sessions for Mauritian teachers</th>
<th>Coursera – All teachers around the world</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 – Orientation session for Mauritian participants</td>
<td>Week 1: Coursera</td>
</tr>
<tr>
<td>Week 2 – Resources to help student to be able to complete the week on Coursera</td>
<td>Week 2: Coursera</td>
</tr>
<tr>
<td>Week 3 – same as Week 2</td>
<td>Week 3: Coursera</td>
</tr>
<tr>
<td>Week 4 - same as Week 2</td>
<td>Week 4: Coursera</td>
</tr>
<tr>
<td>Week 5 - same as Week 2</td>
<td></td>
</tr>
</tbody>
</table>
Week 6 - Resources to help student to be able to complete the week on Coursera

Week 5: Coursera

- It is important to note that 115 participants have been sorted out of the 600 who have registered for this course, as the Open University of Mauritius could not handle more than 60 participants per face-to-face session.

- Face to face sessions consisted of:
  
  o Content expert live presentation

  o Peer presentations

- A MOODLE platform was accessible to local students to facilitate integration to the live Coursera platform. This MOODLE platform was accessible only to students accepted by the OUM.

- The MOODLE platform consisted of the following:

  o Video and audio format of guest speaker presentations

  o Video format of Peer presentations

  o Discussion forums

  o Polls

  o Internet interesting links

  o YouTube videos

  o Announcements

  o Coursera Course Description

  o PowerPoint presentations on the topic of the week
Sample of a week content on MOODLE platform:

**The OUM evaluation consisted of:**

- **Portfolio (75%)** which was optional for participants who wished to be considered for the scholarship if they would fulfill the OUM requirements.
  
  - *Reflection:* Your learning experience throughout the course. (15%)

- **Research Findings (10%)**

- **Application (40%)** (students had to choose 2 technologies)

- **Formal Aspects (10%)**
  
  - Participation in discussion forums (15%)
  
  - Attendance (10%)

- **Bonus:** Completion of Coursera requirements (10%)
  
  - Individual Assignment, 5 Peer Assessments, Final Quiz
  
  - Statement of Accomplishment

**Methodology**

The methods we used for this research is a survey questionnaire comprising of 39 questions divided into 7 parts, interviews of 2 facilitators and 2 students and observation.

The total number of participants for the Emerging Trends course was 115. The survey questionnaire had been sent to all participants who followed the course. Since this course had been done in December 2013 and the questions being in French not all participants filled in the survey.

Interviews conducted were designed in away to guide the answers of the interviewers but they also could voice out their own opinion.

Observation was made possible by the data collected from the MOODLE platform.
Results and analysis

Concerning the organisation of this hybrid course access to a MOODLE platform locally was made possible to students before they could access the Coursera MOOC. This type of course structure had been put in place as according to the main tutor it was difficult for participants to navigate on both platforms for a first time, the participants stress could thus be managed in an easier way, at the end of the first face to face session after feedbacks were given participants felt relieved, at the beginning all this was not known to them as they embarked for the course they knew what was awaiting them, how to go about the course and where to navigate to.

Participants tend to find it easier to access the MOOC platform once they were familiar with the MOODLE platform and this was stated by 90% of the respondents of the survey. We wanted more details concerning the participants’ choice and some of the answers that were recurring are as follows: ‘once MOODLE had been used it was easier for Coursera’, ‘it is more interesting to begin with what is easy’, ‘the platforms are similar’, and ‘more at ease’. From the responses we can state that participants’ perception of the use of the MOODLE platform slightly differs but as a whole participants tend to find Coursera MOOC easier once they have gone through the linear structure of getting familiar with a MOODLE platform prior to beginning the course on a MOOC platform. We wanted to further our questioning in terms of MOODLE being an advantage prior to using Coursera MOOC and half of the respondents found that in fact using MOODLE was an advantage and another half found that it was not an advantage and they stated their opinions in the following manner: ‘both are platforms’, ‘it is not difficult at all’, ‘Moodle helps us to get acquainted with these types of Content Management System’, ‘better understand the course’, ‘to familiarise with discussions’, ‘there are more interactions, easier to interact with others’, ‘if like me you are not familiar with forums’, ‘easier to understand’. When participants were asked their opinion about the way the course had been organised they replied that they thought it was a good organisation (48 respondents), 8 respondents knew about the MOOCs and said that they were at ease with the course organisation, the remaining respondents stated that overall the way the course had been structured was a good initiative.

As participants had to be active on two learning platforms that is MOODLE and Coursera MOOC, participants had to point out differences if any between the two platforms. A number of participants found that the MOOC hosted on Coursera platform is user friendly (8), 24 respondents found that there were no differences between the two learning platforms, 16 respondents stated that the MOOC enables more contacts internationally and 32 participants found that MOODLE is more private. These figures show that a smaller and dedicated platform like MOODLE makes participants feel more at ease than in the MOOC as respondents qualify MOODLE as ‘easier to communicate’, ‘some peers can be recognised as well as the tutor’, ‘more accurate’, ‘available for those who wish to find solutions to a specific matter’.
Out of the 115 active participants who accessed the MOODLE platform, a majority that is 105 respondents found that the local discussion forums were worthy of interest compared to 4 who stated that the forums were of no interest to them.

The following table is a comparison of the participants’ opinion concerning interactivity in the discussion forum for MOODLE and Coursera MOOC.

<table>
<thead>
<tr>
<th>MOODLE</th>
<th>COURSERA MOOC</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Definitely</td>
</tr>
<tr>
<td>Did you find it easy to voice out your opinion?</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>72</td>
</tr>
<tr>
<td>When you interacted in the forums did the tutor respond?</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td>When you interacted in the forums did your peers</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>60</td>
</tr>
</tbody>
</table>
A majority of participants found that it was easy for them to give their opinion on the MOODLE discussion forum. 84 respondents found that it was easy for them to interact in the forums. They all agreed that the tutor did respond to them in the forum. 78 participants that is more than half of the participants stated that their peers responded to them.

The same questions had been asked concerning the Coursera MOOC discussion forums and the answers were slightly less. So it seems that participants had benefitted from discussion forums on both platforms.

Respondents were asked if they felt that they had an identity on the Coursera MOOC and most of them said that indeed they felt that they possessed an identity so even though the MOOC had a massive number of participants students did not feel unnoticed.

The limited number of registered participants locally has enabled the scheduling of face to face sessions. There were 2 sessions per day, one in the morning and one in the afternoon. Each session had duration of 2 hours and was conducted over six weeks. Participants had to engage themselves to be present for the face to face sessions in order to be able to register for this hybrid course. When asked about the on campus sessions most participants found that these sessions were very useful (62) and useful (26), partly useful (4) and no one found the sessions useless. In a nutshell we can say that most participants were satisfied with these sessions as the total number of satisfied participants amounts to 88 over 92.

It is to be noted that 108 participants felt at ease to follow the course even though there was a significant number of worldwide participants following this course on the Coursera MOOC. They stated that the number of registered participants for the MOOC did not affect their learning.

Coming to face to face sessions the OUM had to sort out the numbers of participants as they could only offer tutoring for a class of 60 participants at a time. 108 students said that they were satisfied as the tutors have been able to respond to their queries. 80 participants found that the face to face sessions helped them in the interaction process of this type of course.

Participants were asked what they thought about the face to face sessions and the following table summarises their opinions:
How did you find the face to face sessions on campus?

<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Of no interest</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Good but could have</td>
<td>29</td>
<td>15</td>
<td>4</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>been better</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandatory</td>
<td>19</td>
<td>15</td>
<td>11</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>Very useful and</td>
<td>67</td>
<td>70</td>
<td>83</td>
<td>49</td>
<td>37</td>
</tr>
<tr>
<td>enriching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total of respondents</td>
<td>115</td>
<td>101</td>
<td>98</td>
<td>72</td>
<td>65</td>
</tr>
</tbody>
</table>

From the collected data it appears that as weeks went by, participants seldom gave their opinion concerning the face to face sessions. The highest number of appreciation is that of these on campus sessions being useful. Only one respondent found that these sessions were useless.

**Conclusion**

To conclude we will say that the hybrid MOOC in the Mauritian context proved to be a success in a nutshell as participants were active on both platforms: MOODLE and MOOC. For the majority of students it was important to attend scheduled face to face sessions as they did not have prior experience in online learning. For those who had online experience, they stated that both platforms were equivalent, those who had lesser experience of online learning qualified MOODLE as more ‘private’. At the time that this research had been conducted it was understood that MOOCs more specifically HOOCs were at their mere beginnings. This first HOOC had shed light on the motivation of an institution to propose such a course. Tutors were ready to be part of such an experience for free, students were willing to free themselves and spare time for this course, to engage in the course till the end and to achieve a successful completion rate compared to what had been reported in the literature.
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