Journal of Learning for Development – JL4D

HOME   ABOUT   LOGIN   REGISTER   SEARCH   CURRENT

ARCHIVES   ANNOUNCEMENTS

Home > Vol 1, No 2 (2014) > **Mercier**

Exploring the Potential of Online Courses to Develop Capacity for Sustainable Development

Jean-Roger Mercier

VOL. 1, No. 2

Abstract

A small team of independent entrepreneurs developed two Massive Open Online Courses (MOOCs) on sustainable development that attracted over 400 participants. This article describes the original intentions and formats of the MOOCs as well as their actual performance. With little publicity, the courses revealed strong buy-in by the participants and resulted in both a high percentage of completion and degree of satisfaction. Based on this experience, we believe that MOOCs have the potential to provide the impetus needed in initial and vocational training to respond to the challenges of capacity development, highlighted in the Post-2015 Development Agenda and in reflections on Africa like the "Madavo Report" (2005) on capacity building in Africa.

Introduction

A small team of independent entrepreneurs developed, , two Massive Open Online Courses (MOOCs) on sustainable development, without support from public funding agencies. The first, a six-week course entitled *MOOC "Effets durables" (ED)*, provided a broad introduction to sustainable development for 275 participants mainly from French-speaking Africa during Fall 2013. The second course, entitled *MOOC GPROSE (Gestion préventive des risques opérationnels sociaux et environnementaux – Preventive Management of Operational Environmental and Social Risks),* was more specialized – focusing on Environmental and Social Assessment in the international context. It benefited from a *pro bono* collaboration with the NGO "RSE-et-PED"[1] and attracted 162 participants. MOOC GPROSE generated interest in the community of practitioners in international development in several countries around the world with a large majority of African participants of both genders. Both MOOCs were delivered in French.

Michel Denis, an e-learning specialist based in Southern France, came up with the idea of applying MOOCs to sustainable development, designed the first MOOC from scratch and is, more generally, the technical and instructional designer on e-learning in the informal Net Learning Team (NLT).

Some MOOCs mobilize audiences in the thousands. At the international level, 2013 was the "Year of the MOOC" with hundreds of such courses being offered, in all forms and shapes of education and training, basic as well as "on the job".

Methods

What follows is a description of the preparation, delivery, and post-delivery analysis of the two MOOCs. It is a self-evaluation of about 10 months of work by Michel Denis and his partners.

OPEN JOURNAL SYSTEMS

Journal Help

USER

Username [   ]
Password [   ]

☐ Remember me
[Login]

NOTIFICATIONS

- View
- Subscribe

JOURNAL CONTENT

Search

[   ]

Search Scope
[All   ▼]
[Search]

Browse

- By Issue
- By Author
- By Title

FONT SIZE

INFORMATION

- For Readers
- For Authors
- For Librarians

ARTICLE TOOLS

Abstract

Print this article

Indexing metadata

MOOC "Effets durables" (ED) on sustainable development was announced on several social networks in August-September 2013. Using only social networking, 275 interested persons registered to study one or more of 12 separate sustainable development themes over a set period of six weeks (mid-September to the end of October). Twelve volunteers assisted Michel Denis and Nadine de Cordt, the original designers, each acting as the facilitator for one of the themes. The pedagogy of MOOC ED was very interactive. The organizers probed each participant's interests before the official opening of the MOOC and, for participants registering during the MMOC, as soon as they registered. Participants were asked what their "burning questions" were, a gimmick to incite them to disclose their training objectives. The organizers compiled these responses and integrated the objectives in the selection and design of the resources (which include documents, videos, and Internet links) supplied by them, online, within the MOOC virtual space. Towards the middle of the course, participants were invited to prepare mini-projects on their theme of choice, using one of the many tools at their disposal in the MOOC ED space. Mini-projects were defined by Michel Denis as case studies, proposed by each thematic facilitator, that would be developed collectively and interactively by the participants who agreed. The outcome was a document that, in quality and length, would represent the synthesis of the lessons learned during the course. For instance, participants produced a short, but documented charter on sustainable tourism. A group working on the topic "towards more inclusive development" launched its mini-project and went some way into producing a guidance document on how and why to identify and involve key stakeholders in the promotion of positive energy territories. An overall final quiz served as validation of MOOC ED.

MOOC GPROSE (Gestion préventive des risques opérationnels sociaux et environnementaux – or Preventive Management of Operational Social and Environmental Risks) targeted professionals and students interested in the process of Environmental and Social Assessment of international development projects. The marketing followed closely MOOC ED's model. In advance of the event, two worldwide MOOC catalogues published the details on MOOC GPROSE. Two volunteers provided the content of the course. A total of 162 participants – more than 100 residing in Africa – registered and the course, originally designed to last three weeks, ended up lasting six weeksin response to the explicit request by several participants who needed more time to access, download and read the resources as well as to prepare for responding to the quiz. Thirty participants obtained the certificate of participation that required the study of the full six modules and the completion of all quizzes.

The statistics supporting this article were generated by the *Moodle* platform which underpinned the two MOOCs. These data are available and verifiable.

Results

In broad terms, a MOOC is a set of educational activities, openly accessible on the Internet and usually, but not always, free of cost for the user, and endowed with a "massive" architecture in terms of being able to accommodate a large number of participants. MOOCs ED and GPROSE employed connectivist principles by creating a community of "learners" and "teachers" operating in a networked environment.
 Connectivism, according to Carmen Tschofen and Jenny Mackness (2012) is "based on the principle that all learning starts with a connection (Siemens, 2004). These connections occur on neural, conceptual, and social levels (Siemens, 2008), and in connectivism, learning is thought to be "the ability to construct and traverse connections" (Downes, 2007)".
The objectives of MOOC ED were to provide basic knowledge about sustainable development to a variety of francophone users. The MOOC attracted 275 participants. As recorded on the Web site, the six-week MOOC generated about 40,000 learning object activations. A learning object is defined as "any digital resource that can be reused to support learning" (see http://docs.moodle.org/27/en/learning_objects). One activation is simply one action on a learning object (mainly either accessing it, downloading it, or modifying it).

Based on the total number of registered participants, the geographical breakdown was as follows (rounded figures):

- Africa 50%
- France 45%
- Others (Quebec, Haiti, etc.) 5%

This first ever MOOC on sustainable development explored 12 domains:

- Renewable energy
- More inclusive forms of development
- Agenda 21

How to cite item

Email this article (Login required)

Email the author (Login required)

- Circular economy
- Governance
- Education
- Water
- Communication and sustainable development
- Alternatives to growth
- Food
- Sustainable development in 3D
- Demography

Data can be broken down by week and show the number of activities (one activity is, for instance, a participant downloading a resource or accessing the chat designed for the MOOC), the total number of logins, and the number of unique users having connected during the period). Activities varied from 8,911 (week 1) to 3,225 (week 6), the number of unique users remaining in the 82-138 range during the first five weeks and having a low of 80 in the last week.

The objectives of MOOC GPROSE were to enable participants to:

- Understand the stakes associated with the development of Corporate Social Responsibility (CSR), with a special focus on developing countries
- Identify situations where the utilization of Environmental and Social Assessments (ESA) provides an opportunity to enhance the sustainability of development projects, plans, programs and/or policies (PPPP)
- Understand the systemic aspects of organizations that manage operational risks using ESA.

The main target groups were investors, development practitioners, researchers, scholars, and students, as well as government and/or finance officers. The actual group of 162 persons who registered for MOOC GPROSE was a cross-section of those target audiences.

The six modules of MOOC-GPROSE were (case studies in brackets):

- *Corporate Social Responsibility (CSR)*
  (Simulating a presentation on CSR adoption at the annual shareholder general assembly of a private company willing to invest overseas)
- *Introduction to ESA and their relationship to Environmental Impact Assessment (EIA)*
  (Chad-Cameroon Oil Project's complaint at the Word Bank's Inspection Panel)
- *Project selection and screening*
  (Composite irrigation rehabilitation project in Saïva)
- *Environmental and Social Management Plans (ESMPs)*
  (Mid-Term review of the implementation of Ziga dam – in Burkina Faso – environmental and social management plan)
- *Organizational implications of GPROSE with a focus on accountability mechanisms*
  (Network of International Accountability Mechanisms)
- *Perspectives on ESA and GPROSE with a focus on Post-2015*
  (Perspectives on Post-2015 by the High-Level Group).

It was originally estimated that the time needed offline to read and digest the information provided by the organizers and enable participants to respond to each quiz would be between two and three hours per module.

MOOC GPROSE generated more than 22,000 actions/activities. The cascade of registration/comprehensive achievement of the course is as follows:

- 137 "learners" actually participated partially or totally
- Of the 137, 30, (i.e., 22%) accomplished all the activities and claimed their final certificates
- 47 participants attempted the final quiz and the average rating was 87/100.

Based on the total number of registered participants, the geographical breakdown was as follows (rounded figures):

- Africa 61%
- France 31%
- Other Europe 4%
- Other outside Europe 4%

The key statistics of MOOC GPROSE, following the definitions above for MOOC ED, showed that activities varied from 7,171 (week 1) to 732 (week 5), the number of unique users remaining in the 73-115 bracket during the first five weeks and having a low of 56 in the last week.

- The average time that each participant spent online for the whole MOOC period was 4 hours

- The most active participants spent nearly 30 hours online during the 6 weeks
- The amount of time spent by the participants outside the connection is unknown, but obviously adds to the time spent learning, since the additional tasks included reading the lectures, and preparing for the case studies, quizzes and various other offline activities.

Discussion

Thanks to the quiz and a self-assessment system, it is now possible to evaluate, not just the acquired knowledge, but also the participants' degree of satisfaction with the courses. The general feedback from participantsof both MOOCs was that learning was effective. Key success factors put forward by responders-participants were the variety of proposed activities, their attractiveness, and the much-appreciated commitment of the organizers and moderators. A Burkinabé participant wrote "This topic [sustainable development] is dear to my heart since, as project manager, it will help guide my decisions". A Malagasy participant said, "It was very enriching from the point of view of environmental culture. I learned a lot".

The two MOOCs recorded completion rates of about 20%, a much higher percentage than the average MOOC (less than 7% according to http://www.timeshighereducation.co.uk/news/mooc-completion-rates-below-7/2003710.article). This high rate, combined with the positive feedback, may show that the balance between MOOCs' flexible and interactive approach and the complexity of the subject, was appropriate for the audience.

The Internet, indeed, may make capacity enhancement close to being financially competitive with "in room" learning. Germany.info, for instance, mentions an average vocational training cost of 15,300 € (20,065 US$) per trainee per year, which translates into about 10-20 €/student-hour (13.5-27.0 US$). The author's own estimate is that, under commercial conditions and during the coming years, the corresponding cost could be around 25 €/student-hour with much lower values when audiences exceed 1,000 participants. It is not unreasonable then, to hope that, far from being a "cheap" learning tool, MOOCs can be a powerful capacity developer in a network environment owing to a more personal approach, increased/improved learners' commitment, and instant access to global expertise.

Several features of the two MOOCs worked particularly well. For instance, learners had access, with a simple password, to a Moodle platform where they had the option of toggling between written text (usually PDF files), Internet links, and videos. Home recorded videos produced with consumer-grade equipment and used as lectures or as graphic illustrations of points developed in the written resources were watched, even on slow connections and participants understood their messages, as demonstrated by the high proportion of appropriate responses in the quiz. This is consistent with results reported by previous MOOCs, but the fact that effective videos could be produced at minimal cost is worth highlighting.

Perhaps the most significant achievement is the synergy that was developed "just in time" between the NLT and the RSE-et-PED teams. Having never worked together before and having reached a loose, verbal agreement a few days before the launch of MOOC GPROSE, the teams seamlessly validated and posted the required resources on schedule and answered/reacted to participants' questions within hours or, at worst, a couple of days. The questions raised by the participants were transmitted to the instructors via the forum function in the Moodle platform or during the bi-weekly chats.

The challenge that was successfully taken up by the organizers to start with French language courses may pay off in the longer term. Imbalance between French and English language resources in ESA is huge and growing. For instance, of the 80 or so cases of Inspection Panel complaints that were usable as case studies, only a few (4%) have some French language reference documents. Now that the basic structure of MOOC GPROSE has been validated, feeding the content into an English language MOOC on the same topic with the same architecture will be easy.

Many MOOCs use Webinars (short for Web-based seminars) as ways of communicating between participants and organizers/teachers. MOOC GPROSE organizers would have wanted to use that technology, but that option was unavailable to some organizers, because of their location in a rural area with poor Internet connections. The electronic chat available on MOOC GPROSE was a second-best choice and was used on a weekly basis but failed to gather more than a few participants. The likely explanations for that low level of use of the electronic chat may lay in (i) the exposure that it gives the participant (who may fear not living up to the challenge or, alternatively, may fear criticism for language mistakes or failures) and (ii) the constraints imposed by the one-hour set format. Webinars, with more revolving doors and less interactivity, resemble the

more conventional dissymmetric teaching relationship and be less intimidating.

Third-party certification will add to the credibility of the MOOCs in terms of an ability to check that the knowledge and skills have indeed been acquired above and beyond a rather anonymous quiz. Third party certification (TPC) would entail an independent, respected institution making direct contact with all or a significant sample of participants, quizzing them independently from the organizers, assessing the responses and providing a seal of virtue and authenticity to the certificate delivered by the MOOC's organizers. This was not made possible for financial reasons for MOOC ED and GPROSE, but should be mainstreamed in the future, resources permitting.

Conclusion and Recommendations

MOOCs provide the international community with another option to help solve a critical development problem: enhancing capacity for sustainable development in a massive and rapid manner.

In a 2005 World Bank report, Callisto Madavo makes the case for capacity development in Africa. He estimates that lack of capacity remains a binding constraint on development and poverty reduction. He encourages Africans, both on the continent and abroad, to take the lead in capacity development and aid management. At a time when many of the Sub-Saharan African nations are experiencing excellent economic growth, Madavo's message should be heard loud and clear.

In a more recent and separate effort (2013), the High Level Panel, working from the perspective of Post-2015 international consensus, recommends five main directions, all synergetic with the MOOC approach:

1. Leave no one behind
2. Put sustainable development at the core
3. Transform economies for jobs and inclusive growth
4. Build peace and effective, open and accountable institutions for all
5. Forge a new global partnership

The questions are "Who will spearhead this huge effort?" and, at a more pedestrian, but equally critical, level, "Who will pay for it and will the financial resources be on par with the challenge?" Indeed, the present business model dominating the exploding online training domain are universities using their existing resources, free faculty time, and cheap student labour to offer a wide variety of free-to-the-user MOOCs. But universities have their Achilles heels: lack of adaptation to users' needs, lack of rapid response, limitations in transdisciplinarity, and low incentive for true innovation. As demonstrated by the successful MOOCs discussed in this paper, there is clearly a need for MOOCs on topics geared to the needs of specific audiences and developed, by small private entrepreneurs.

The design and development of a first MOOC is a costly undertaking and can be guesstimated at about 60,000 € (80,000 US$) in fees alone. Repeats of existing MOOCs with limited design changes would probably be in the 20,000-25,000 € range. This might translate into a total cost of 25 €/participant-hour. At the end of the day, it is the invisible hand of the market that will pick the winners and leave the losers to wonder what they missed.

Footnote

http://www.RSE-et-PED.info, specialized in knowledge management on Corporate Social Responsibility in developing countries

References

1. Downes, S. (2007). *What connectivism is.* Retrieved from http://halfanhour.blogspot.com/2007/02/what-connectivism-is.html
2. Tschofen C., & Mackness J. (2012) Connectivism and Dimensions of Individual Experience. *International Review of Research in Open and Distance Learning,* Athabasca University, Canada. Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/1143/2086
3. Siemens, G. (2004). *Connectivism: A learning theory for the digital age.* Retrieved from http://www.elearnspace.org/Articles/connectivism.htm
4. Siemens, G. (2008). *What is the unique idea in connectivism?* Retrieved from http://www.connectivism.ca/?p=116
5. United Nations. (2013). A new global partnership: Eradicate poverty and transform economies through sustainable development. The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, New York

6. World Bank. (2005). Building effective states, Forging Engaged Societies, Report of the World Bank Task Force on Capacity Development in Africa, Washington DC.

Selected Internet Resources on MOOCs

http://upload.wikimedia.org/wikipedia/commons/a/ad/What_is_a_MOOC.ogg

http://moocguide.wikispaces.com/2.+Benefits+and+challenges+of+a+MOOC

Jean-Roger Mercier, a French national, originally trained as a mathematician then opted for a career in international development in the early 1970s. In charge of Environmental Assessment at the World Bank (1994-2006), he is the author of a half dozen technical books on natural resource management. *E-mail: mercierjeanroger@gmail.com*

Refbacks

There are currently no refbacks.