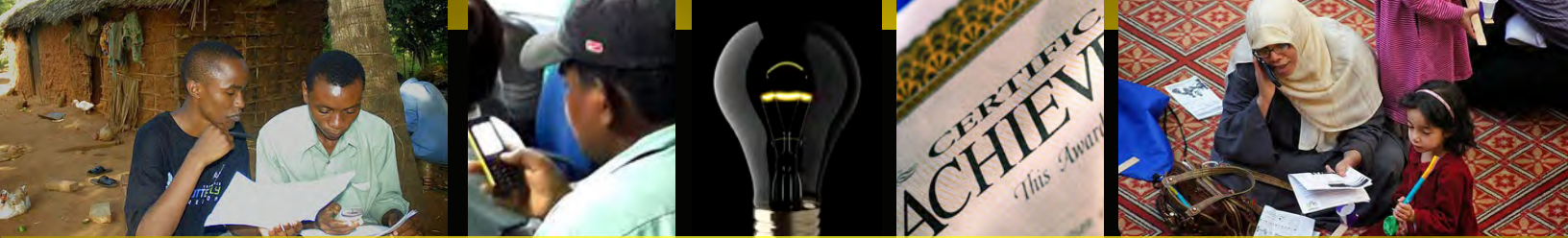




MOOC on MOOC

MASSIVE OPEN ONLINE COURSES FOR DEVELOPMENT



Massive Open Online Course
(MOOC) on MOOCs:

Course Evaluation

by Kirk Perris
for the Commonwealth of Learning

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Executive Summary

The MOOC on MOOCs course offered jointly by the Commonwealth of Learning (COL), the Indian Institute of Technology, Kanpur (IIT-K), and the Technical Education Quality Improvement Program (TEQIP), in the fall, 2014, had enrolment of 2,344 participants from 91 countries (1,688 participants were characterized as active based on volume of activity). In total, 310 participants earned a certificate of participation and among these, 111 participants earned a certificate of competence.

The course was characterized by its openness. Registration required no personal or demographic information (save an email address for verification). Participants' desire for assessment once the course had begun was met, and the course was lengthened to accommodate more time for learning and to meet assessment requirements.

The MoM course was run on a beta version of the mookIT platform, designed by IIT-K.

Key Findings

Course Content and Design: The course covered topics such as sustainable development, instructional design and computer hardware. The eclectic nature of the content was of value to participants from particular sectors due to the complementarity – there was something to be learned by all participants. The varied places/countries of origin of instructors and participants were of value to participants with reference to experiencing a range of perspectives and to have better contextualization of content. The instructional design was didactic (and characterized as an xMOOC), and benefited from multiple pathways to communicate among instructors and participants and from timely responses from instructors.

Course Platform: The mookIT platform piloted with the MoM course is customizable, of low cost to run, and scalable. Combined with its aesthetically appealing interface and intuitive navigation, the platform has the potential for wide use as an open source educational tool.

Assessment and Certification: Although two types of certificates were offered for successful completion, the pathways to certification could have been clearer. Once established, the assessment activities leading to a certification appeared adequate and appropriate, but participant input reflected a desire for greater volume and variance in assessment activities.

Cost Analysis: The cost analysis does not offer a complete picture of resources invested in the MoM course. In particular the amount of labour required to run the course, which was spread among 13 individuals, is absent. In future offerings, an accounting of time commitment may be worthwhile to serve as a benchmark of value, particularly considering there are future MOOC

projects in the pipeline at IIT-K. Overall, the products of the MoM course and the mookIT platform are deemed to be of tremendous value and cost effective based on the data available.

Course Analytics: Tracking some patterns of participants' postings (e.g., comments) revealed unexpected behaviour. As the course progressed postings decreased, then increased, then decreased again. The introduction of the video assignment mid-course, and the commensurate strategy to invite participant feedback to individuals' assignment submissions, may have jolted participants to re-engage with the activity of submitting postings with regularity, as occurred at the early stages of the course. Analyzing certain participant behaviour at intervals, or making mid-course alterations during the offering of a MOOC, may offer insights to augment participant interaction, or more importantly, sustain participant interest through the duration of a MOOC.

Introduction

Over the past several years, the Commonwealth of Learning (COL) and the Indian Institute of Technology, Kanpur (IIT-K) have joined to build massive open online courses (MOOCs). The lead figures from each organization are Dr. Balaji Venkataraman of COL and Prof. TV Prabhakar of IIT-K. They have fused their backgrounds in agriculture and sustainable development, and computer engineering, respectively, to create novel MOOCs that serve purposes far different than those that have been popularized in North America over the last several years.

Led by Balaji and Prabhakar, COL and IIT-K launched their first joint MOOC, *Mobiles for Development* (M4D) in the fall, 2013. The six-week course aimed to provide participants with an overview of mobile phones as devices that could augment sustainable development through areas such as agriculture, healthcare, communication and teacher education. The course was unique in that it jointly focused content on social and technical aspects. By addressing some of the social issues faced in many parts of the emerging world, participants utilized the content knowledge they acquired to program mobile phones to develop novel applications (Perris, 2013). The course attracted 2,282 learners from 116 countries, of which 1,441 were deemed active. 333 participants, or 23% of active enrolment, earned a certificate of competence or participation, depending on extent of participation (Porter, 2014).

The course is an example of a paradigm being framed as *MOOCs for Development*. The Commonwealth of Learning has adopted this tagline as part of its mission to widen access to learning by leveraging technology for open and distance learning (MOOC on MOOCs, 2014a). Another example of COL's involvement in *MOOCs for Development* occurred in New Delhi in March, 2014, where COL and the National Academy of Agricultural Sciences convened a meeting under the heading, "[MOOCs for Capacity Building in Indian Agriculture](#)". A reflection of broader appeal to this paradigm occurred in April 2014 where the first conference on *MOOCs for Development* was held and jointly organized by the University of Pennsylvania and UNESCO (University of Pennsylvania, 2014). The themes of the conference centred on MOOCs and associated trends, MOOCs and inclusion, and MOOCs and pointed areas of sustainable development such as health and teacher training. Balaji was one of approximately 60 invited speakers to the conference held in Philadelphia.

The focus of the *MOOCs for Development* paradigm is diverse. Partnering with mainstream MOOC providers such as Coursera and edX has occurred in Africa (Trucano, 2013; Heinlein, 2014), China (Coursera, 2013; edX, 2013), and elsewhere (Fastcompany, 2014). These advocates are seeking to use MOOCs as one means to meet an unmet demand for higher learning among their domestic populations. Prime Minister Narendra Modi of India has now famously been quoted for his position on MOOCs. At the BRICS summit in July, 2014, he stated he, "could also consider establishing massive open online courses for making quality education accessible to all," (India Today, 2014) cited under his slogan for India of *Skill, Scale, and Speed* (Chaudhari, 2014).

Like the M4D course, the *MOOC on MOOCs* course, which is the focus of this evaluation report, offers another approach under the *MOOCs for Development* paradigm. The idea of replicating the university experience to satisfy intellectual curiosity or to pursue a credential is not the focus of these courses. Instead, these MOOCs provide training and skill development with the intent of participants being able to apply knowledge and skill to solve pressing issues primarily in the space of sustainable development.

Aims and Organization of Evaluation Report

The report functions to provide an evaluation of the course, *MOOC on MOOCs*, designed by the Commonwealth of Learning and the Indian Institute of Technology, Kanpur. A secondary component to this evaluation is a review of the online platform, mooKIT, which was piloted using the MoM course.

The report will provide insights to COL and IIT-K staff in regards to the design and delivery of the MoM course, and on the user experiences of instructors and participants. The aim is to gather information to consider refinements to the MoM course and other MOOCs that may be designed in future, and to advance understanding about the utility of MOOCs in the broader space of sustainable development. An additional aim is to provide information and insights to other individuals or organizations considering participation in MOOCs as a designer, instructor or learner.

The report begins with a description of background information on the genesis of the *MOOC on MOOCs* course. Part of this background will include the impetus to design the mooKIT platform. An introduction of the participating organizations and funding sources will follow. Section I will conclude with an overview of the research methods utilized in the report.

Section II of the report provides an analysis of the *MOOC on MOOCs* course. This will include the aims, objectives, enrolment, expectations/certification, course design features and course platform features. Section II concludes with a cost analysis of the MoM course and of the mooKIT platform.

Section III presents the results of the instructor questionnaire, the participant survey and some analytics of participant interaction. Qualitative and quantitative analyses are provided. Section IV is a summary of the report and Section V lists a series of recommendations

Section I: Background to MOOC on MOOCs

Origin of the MOOC on MOOCs Course

The decision to design the MoM course was seeded to several events.

In February, 2014, the Technical Education Quality Improvement Program (TEQIP), a branch of the Ministry of Human Resource Development in India, contacted IIT-K about designing MOOCs catered to learners in India and abroad with a focus on engineering. IIT-K were in agreement with the proposal and added the desire to build a new platform to deliver MOOCs.

The premise behind designing a new platform was two-fold. First, previous experience of developers and instructors at IIT-K in using varying learning management systems were limited in customization and/or offered an unappealing interface. Those at IIT-K were intent on ameliorating these shortcomings through a novel platform. Second, an open source platform that was designer and user friendly would be conducive to use by wider audiences intent on experimenting with designing, teaching or enrolling in a MOOC. Considering the high levels of attrition associated with MOOCs, the approach to create a platform with designer and user interests as a central focus was prudent, and surprisingly novel.

The second event was in March, 2014 in New Delhi. A meeting convened between the Commonwealth of Learning and the National Academy of Agricultural Sciences (NAAS). The meeting operated under the heading of "[MOOCs for Capacity Building in Indian Agriculture](#)". The aim of the meeting was to brainstorm the potential of MOOCs offered through varying devices to augment knowledge and skills in agricultural practices in India and other emerging countries.

During this meeting it was proposed that there could be a need and audience for a MOOC to be used in a wider sustainable development context. COL representative Dr. V. Balaji communicated with Prof. TV Prabhakar of IIT-K, who at the time was working on a course entitled [Mobiles for Malis](#)¹, designed to augment knowledge of horticultural practices through mobile phones among farmers with limited literacy skills.

Dr. Balaji's proposal to engage in another MOOC project with focus on design of the course type itself was well-received. As noted in the Introduction these two individuals had earlier led the design and delivery of a MOOC entitled, *Mobiles for Development*. The success of this course was another prompt for COL and IIT-K to partner on a new initiative. The agreement with TEQIP and IIT-K to produce a new MOOC platform seemed like a logical fit in which to deliver the novel MOOC course proposed by Dr. Balaji. The beta version of the platform, known

¹ Mali is a Hindi term that means gardener.

as mookIT, would deliver the novel MOOC, which was named *MOOC on MOOCs*. The course would be offered in the fall, 2014 for five weeks.

The Institutions:

The Indian Institute of Technology, Kanpur is located in the city of Kanpur in the State of Uttar Pradesh, India. IIT-K is one of the oldest IITs that were established in post-raj India under the vision of India's first Prime Minister, Jawaharlal Nehru.

The Commonwealth of Learning is located in Vancouver, Canada. It operates as an international non-government organization dedicated to supporting the 53 states that form the Commonwealth. In this context COL functions to advance the use of open and distance learning for all levels of education and in formal and non-formal settings. It provides technical and policy advice to governments and higher education institutions, and other entities that have an interest or organizational focus on utilizing open and distance learning to widen educational opportunities, particularly to underserved populations.

The Technical Education Quality Improvement Program (TEQIP) is part of the Ministry of Human Resource Development of the Government of India. TEQIP operates to advance technical education in India with particular focus on engineering. It has programs running in approximately 200 institutions across the country. The partnership between TEQIP and IIT, Kanpur was organized through the Knowledge Incubation for TEQIP initiative (KIT). As indicated on the KIT website, the primary goal of the initiative is to, "provide all the teachers (and aspiring ones) the right support to grow intellectually" (KIT, 2014).

Funding Sources

Two organizations were involved in funding the project: The Commonwealth of Learning and the Technical Education Quality Improvement Program.

The Commonwealth of Learning provided funding of CDN \$15,000. These funds were used to cover the costs of hosting the MoM course and for content development. A studio was rented and other support workers were employed to aid in the development of videos, which comprised the bulk of the course content.

TEQIP provided funding of USD \$15,000. Part of these funds were directed to the design and development of the online platform that would deliver new MOOCs designed and delivered by IIT-K. The original arrangement was for the mookIT platform to operate by running three

MOOCs, one in July, followed by the MoM course and *Architecture Software for the Cloud* course (2014), both of which were offered in the fall.

Research Methods

In this section, the methods used to conduct an evaluation of the *MOOC on MOOCs* course will be outlined. This will include the data collection sources and description of the qualitative and quantitative analyses that will inform the evaluation. Limitations to the evaluation will follow.

First, a description of the role of the external evaluator is offered.

Role of External Evaluator

The external evaluator was commissioned to conduct the evaluation for the MoM course. Prior to its launch in September, the external evaluator spoke with course leads, Prof. TV Prabahakar and Dr. V. Balaji about the course to gather background information. A short article appeared in University World News to detail the course and to depict its novel approach to MOOCs (Perris, 2014a).

The external evaluator did not participate in the design or delivery of the MoM course.

The role of the external evaluator was to provide an assessment of the MOOC on MOOCs course. The external evaluator's primary purpose was to provide staff at the Commonwealth of Learning and the Indian Institute of Technology, Kanpur with critique and recommendations on design and implementation of the course.

Data Collection

Data collection was sourced from documents, personal communication, an email questionnaire, an online survey and the MoM course website. The latter included analyses of course lectures and participant postings (e.g., discussions topics generated by participants in lectures).

Documents included those retrieved from the Commonwealth of Learning and IIT-Kanpur websites, and from other sources including academic literature, news stories, and government and non-government organization websites or reports.

Personal communication included several phone calls with course leads, Dr. V. Balaji and Prof. T. V. Prabhakar.

The questionnaire was comprised of ten open-ended questions (See Appendix A). This was sent to course instructors via email. In total, four of six individuals provided responses to the questionnaire.

The survey was delivered on Google Forms and sent to all active participants via email. Questions were a combination of forced choice and open-ended. There were 26 questions in total (See Appendix B). Of the 1,688 active participants² who were sent the questionnaire link, 185 submitted a completed questionnaire. This represents a response rate of 11 percent.

Both the questionnaire and survey were designed by Dr. Balaji with input from the external evaluator.

Data Analysis

The methods utilized for this analysis were qualitative and quantitative. The qualitative technique of coding was utilized to develop themes of textual responses in the participant survey and instructor questionnaire. Salient quotes were utilized from both instruments to expand on varying themes.

Descriptive statistics were utilized to summarize quantitative data retrieved from the participant survey and from participant postings on the MoM course website.

Evaluator comments are situated throughout Section II: The Course, and Section III: Results.

Limitations

The limitations of this evaluation report are centred on the extent of data collection.

Since the response rate to the online survey was 11%, the findings from the data are not representative of the entire sample of 1,688 active participants. In this sense, the findings from the survey data serve to illuminate areas for further inquiry rather than to provide definitive claims regarding participant perceptions.

Further, the instructor questionnaire was limited to close-ended responses. As such, instructors' comments in the questionnaire that may have warranted some prodding for clarity or context by the evaluator were not feasible.

² Active participation was qualified as an individual participant who had registered for the course and viewed at least five videos.

Section II: The Course

In this section the following areas of the MoM course will be described:

- Course aims
- Objectives
- Enrolment
- Expectations/certification
- Design
 - Course content
 - Instructional design
- Course platform
 - Technical components (Content management system; Learning management system)
 - Interface/usability aspects
- Cost Analysis
- Summary of Course

Course Aims

The aim of the MoM course was to cover key concepts, methods and practices of MOOCs. The website included an Introduction video on the course homepage stating the following aims:

- Provide an overview of the MOOC landscape – its taxonomy and ecology
- Open up a MOOC – what are its components and its interactions (broadly described as the architecture of a MOOC)
- Present how MOOCs are impacting formal education in terms of certification and credentialing
- Discuss the processes to run a MOOC

Course Objectives

The MoM course website listed the following objectives in regards to knowledge learners would acquire:

- Different types and styles of MOOCs
- Key aspects of content authoring and pedagogy
- A variety of methods for grading, assessment and certification

- More effective peer-to-peer learning and online mentoring
- Technology components that go into a MOOC and platforms
- How to participate in a MOOC more effectively
- The basics of copyright and intellectual property matters in MOOC content
- Costs and resource management of a MOOC
- Different types and styles of MOOCs

(MOOC on MOOCs, 2014b)

In addition to these objectives, the premise behind the course was described as awareness raising by several instructors of the development team.

Enrolment

No prerequisites were required to participate in the MoM course. Enrolment was open to anyone with a reliable Internet connection. The following broad groups were identified as suitable learners to enrol in the MoM course:

- Faculty members interested in pursuing online learning with the intent of reaching a large and broad audience.
- University or other educational institution administrators or planners interested in implementing MOOCs within an organization.
- Extension specialists interested in reaching rural inhabitants to augment knowledge and practice in crop yields, public health, and rural development
- Students who have completed a MOOC, and/or are interested to learn more about the course format and enhance employability

COL was mainly responsible for advertising the course to prospective participants. It used Facebook and Google's search-based display. There was also promotion of the course through COL communications, such as its *Connections* newsletter, which is mailed/emailed to thousands of subscribers (Commonwealth of Learning, 2014, p.14).

Course Expectations and Certification:

The time commitment of learners in the MoM course was anticipated to be about four hours per week and centred on viewing video lectures. Three synchronous chat sessions were scheduled between participants and instructors. Each session was for one hour and was held midday, India Standard Time. Transcripts of these chat sessions were posted as links in the

Resources section on the MoM course website. Throughout the course, instructors made themselves available to respond asynchronously to learners' queries.

In regards to certifications, information on the course brochure (and an announcement on the course homepage) stated the following:

Learners who fulfill the minimum participation criteria will be issued certificates of participation. Those who complete online assessments in addition to fulfilling minimum participation requirements will receive certificates of competence. Certificates will be jointly issued by Continuing Education Programme IIT Kanpur, COL and TEQIP.

(MOOC on MOOCs, 2014a)

A certificate of participation was awarded to participants who viewed 50 percent of the video lectures and/or downloaded 50 percent of the PowerPoint slides or transcripts.

To earn a certificate of competence participants were required to meet the criteria for a certificate of participation and to create and submit a short video lecture of approximately 300 seconds related to the course. Videos were to be submitted to YouTube and were to include a description of the topic, and a description of the technological requirements (e.g., type of camera used, editing software). Links to the videos were posted on the course website. An added component (though ungraded) was that all participants' video submissions were available for viewing on the website and open to comments from other participants. There were 111 video submissions (and consequently, 111 certificates of competence awarded).

Grading criteria for the video assignment was measured against 14 parameters that were categorized under the following four headings:

- Content
- Presenter
- Technical Aspects: Video
- Technical Aspects: Audio

Two instructors reviewed each video and marked each video assignment. The grades were subsequently consolidated by a senior instructor who assigned the final grade for the assignments. A sample grading report is provided in Appendix C.

Evaluator Comments

The information posted regarding requirements for certification was somewhat unclear. There were no minimum participation criteria or a description of online assessments provided at the beginning of the course on either the course brochure or the course homepage. Three weeks after the course was underway, two postings were made available under the *Announcements* area of the MoM course website:

[Posting 1]: Minimum requirement is to have viewed 50% of all the videos posted OR to have downloaded 50% of the PPTs or scripts. Certificates to those fulfilling the

requirements will be mailed sometime in the second half of October 2014 and your registered email ID will be used. [Posted Sept. 26, 2014]

[Posting 2]: The Assignment can be accessed via the Course Home page. It is a part of the Week 3 module. Upload the Video in the Assignment Submission space on the platform. By 6th October (1200 hrs IST) at the latest - earlier the better. This would give enough time for all the participants to see and comment. [Posted Sept. 26, 2014]

(MOOC on MOOCs, 2014c)³

As will noted in the Results Section (Section III), there seemed to be disconnect between instructors' outlook that assessment was unnecessary and participants' expectations that there would be assessments throughout the course. The video assignment was created to appease participants' requests for some form of assessment.

Course Design

To analyze the course design of the MoM course, four areas were examined

- Content
- Instructional design
- Assessment activities
- Course platform

Course Content

The majority of content was created from scratch. Some topics were re-purposed from a previous course, *Architecting Software for the Cloud* (2014), designed by Prof. Prabhakar.

The topics of the MoM are summarized as follows:

Origins of a MOOC (Week 1)

- Taxonomy
- Predecessors
- Rationale/Interest

Architecture of a MOOC (Week 2)

- Best Practices
- Learner and instructor interaction
- Assessment
- Analytics
- Certification

Costs to run a MOOC (Week 3)

³ Note, to access this reference (<http://mooconmooc.org/#/announcements>), it is required that an individual goes through the simple process to register and log in to the course.

- Hardware and Hosting
- Quality
- International examples (India – NPTEL, Google, Microsoft; US – MIT; UK – FutureLearn)
- Platform design (Google Course Builder; MITx)
- Creating video lectures

Variations in MOOCs (Week 4)

- Mainstream MOOC providers
- Pedagogical and practical considerations
- MOOCs in the developing world

Running a MOOC (Week 5)

- Planning a MOOC
- Running a MOOC
- Managing a MOOC

Evaluator Comments

The coverage of content topics was deemed to be well-sequenced. Beginning with the origins and types of MOOCs followed by common practices and instructional design provides a foundation before being exposed to more technical aspects. One suggestion would be to move Week 4 content to Week 2. This seems more logical in terms of providing a general overview of the range of MOOCs which could then be used to look at best practices, assessments, etc.

Overall, the content catered to backgrounds in sustainable development, programming/technical requirements and online learning pedagogy. As such the array of topics would seem appealing to an eclectic group of participants which is often characteristic of enrolment in a MOOC. This also reflects the complexity of MOOCs relative to type, implementation and design.

The topics on analytics and pedagogical techniques such as the Flipped Classroom were timely and beneficial. Expansion of analytics and/or research in general on learner outcomes of a MOOC is recommended. As part of this report on the MoM course, a simple statistical analysis of patterns of postings by participants revealed novel findings. Demonstrating the merits of analytics in more detail would provide a good example of how to infuse quality assurance into the design of a MOOC. Other considerations for added content include design and selection of topics/content and marketing of MOOCs.

There was also a good balance between audio and visual presentation of content. As will be noted in a following subsection on course platform (in this Section II), video lectures provided visual representations of ideas or concepts and there were PowerPoint slides and instructor transcripts available for download for most video lectures.

The course content also benefited from a range of presenters, including a handful of guest speakers. Well known figures in the field of MOOCs agreed to devote some of their time and included Sir John Daniel (former President of COL) and Prof. Sanjay Sarma (Director for MITx).

Instructional Design

In pedagogical terms, the instructional design for the MoM was primarily didactic – content was delivered through video lectures. In total, there were 38 video lectures that covered the topics listed in the Content subsection. Lectures were comprised of a speaker in front of a camera with interspersed shots of PowerPoint slides. Presenters would add notes or diagrams on the screen to illuminate information on the slides.

Individual lectures ranged from three minutes to 25 minutes. The compilation of video lectures aggregated by week ranged from approximately 40 minutes to 120 minutes.

Participants were invited to add topics for discussion to each lecture which created threads of discussions between learners and between instructors and learners. An additional means of interaction between participants was enabled through three chat sessions scheduled in real-time between instructors and learners. The type and volume of interaction is elaborated in Section III: Results.

Evaluator Comments

Overall, the course can be described as following an xMOOC format. An xMOOC resembles a conventional learning environment – content is taught by an instructor to groups of learners. Interaction with the content is supplemented by reading/watching videos, posing questions and completing assessment activities to measure the acquisition of knowledge. In the MoM course, connections between instructor and learner or between learner and learner were facilitated through varying channels, but such activities were secondary to the objective of learning content. In this sense, pre-existing learning experiences were less important than an individual's exposure to the subject matter. This was a different approach from the Mobiles for Development course previously offered by COL and IIT-K, which was far more reliant on collaboration among participants (Perris, 2013).

The short duration of the course mapped well to using the xMOOC format. The organization of content was compartmentalized into weekly chunks, and delivery of content occurred in a predictable method that was sequenced from general to more specific or complex information.

Course Platform

Over a period of six months, a beta version of the course platform funded by TEQIP was designed by in-house programmers at IIT-K. The platform was originally intended to be utilized with three MOOCs, including the MoM course.

The platform was entitled mookIT to connote its intended use to deliver MOOCs. The mookIT platform can be differentiated from other platforms in that it is scalable and of low demand on

a server. According to Prof. Prabhakar, one of the platform's architects, mookIT is also designed to be intuitive to use. He describes other platforms with which he has used as, "quite messy or complicated" (Perris, 2014a). In appealing to mass audiences, as is the case with MOOCs, Prabhakar believes simplicity should be a central design principle. For the participant in a MOOC this means ease of access and ease of navigation. For the designer or instructor, this means ease of customization and ease of managing user traffic.

The mookIT platform is described as a light weight MOOC Management System (MOOC on MOOCs, 2014d). As noted on the mookIT website, a guiding principle is, "creating online courses should be as simple as taking them" (mookIT, 2014). This tagline is unique and greatly expands on the concept of ease of use for online learning to focus not only on participants (or learners), but to also include content developers, programmers and instructors. The platform is characterized as customizable, functional across multiple devices, and to be of low demand on a server. As an open source platform, mookIT has been designed to appeal to individuals or organizations external to IIT-K who may be interested to use the platform for their own online course initiatives.

In describing and evaluating the mookIT platform, the technical components and interface/usability aspects will be addressed.

Technical Components – Content Management System and Learning Management System

The architecture of the mookIT platform is comprised of two components: the content management system (CMS); and the learning management system (LMS). An overview of the architecture of the platform is presented in Figure 1.

mooKIT Architecture

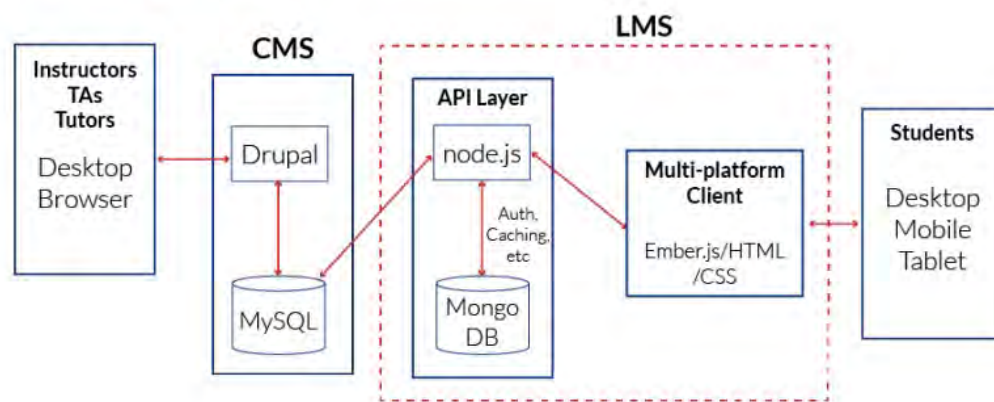


Figure 1: mooKIT Architecture

The CMS component is operable using the Drupal content management framework. Drupal is a free and open source software package that enables users to organize and upload content on a database or server (Drupal, 2014). It is characterized as being highly customizable. Through the Drupal interface instructors are able to upload content, resources, and announcements. This includes customizing the interface and, more importantly, increasing the size of RAM for greater scalability, as necessary. This is an important feature in consideration of the design of MOOCs where enrolment can be large.

Typically the main role of a server or database that hosts a website is to handle user traffic. mooKIT, however, has been designed to minimize traffic by moving complex calculations to a client's machine. One benefit is that the platform can support up to 20,000 users (with greater scalability by increasing RAM), yet minimize the load requirements on the server while reducing the likelihood of the server crashing. Such features keep costs to run a course on mooKIT relatively low, an attractive option to designers or instructors located in the emerging world context where budgets face greater constraints (MOOC on MOOCs, 2014d). The mooKIT platform was hosted on Amazon Web Services (Amazon EC2).

Evaluator Comments

Looking under the hood of the mookIT platform it is evident that the designers considered the functionality of the platform across two broad areas. One is the potential for a large number of participants and the other is the strength of computing power. It appears that the platform has been well designed to accommodate demands from both of these aspects. Although the platform is in the beta version of operability, the architecture seems to have been well designed. Few glitches were noted in the duration of the course.

Interface/Usability Aspects

The second component of the mookIT platform's architecture is the LMS. Here students and instructors can access or download content and information through the interface. The LMS also supports interaction through forums, chat rooms, and an email messaging system to send feedback to the developers. The mookIT platform was designed to be functional on a computer, mobile phone or tablet.

Figure 2 below provides a snapshot of the mookIT platform.

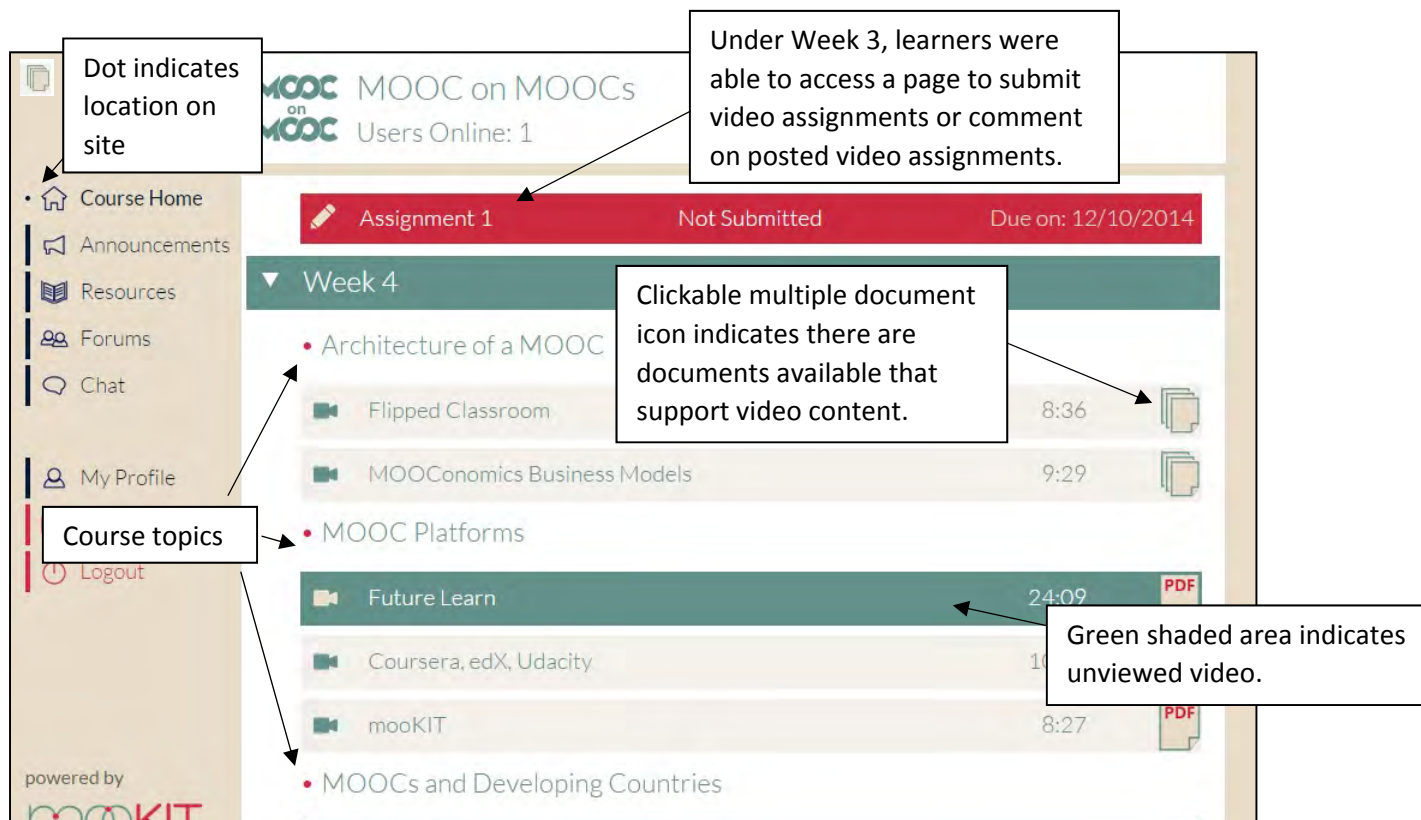




Figure 2: MoM Course Content from Week 4

Access to the entire course is navigable through the left side of the screen as depicted in Figure 2. The small “●” beside the *Course Home* link indicates that the user is at that particular location on the site. On the *Course Home* page the course content is listed by week. Three course topics, denoted by a small “●”, are listed as *Architecture of a MOOC*, *MOOC Platforms*, and *MOOCs and Developing Countries*. Under *Architecture of a MOOC*, there are two video lectures. Clicking on *Flipped Classroom* will open a YouTube clip embedded in the interface.

At the right side of the screen, there is usually one of two icons. The multiple document icon “” signifies more than one document is connected to the YouTube video. Clicking on this icon usually reveals a pdf file of the PowerPoint slide used in the video and a pdf file of the text transcript of the instructor’s lecture. If there is a pdf file icon “”, there is only one document, which is the PowerPoint slide used in the particular video. Only a few videos lacked either pdf document type.

Another useful feature is shading. As can be observed in Figure 2 above, a gray shaded area where a video link is located indicates the video has been previously viewed by the participant. A green shaded area indicates a video has not been viewed by the participant.

Within each lecture there is an option for participants to start a new query, or respond to existing queries on the particular course topic in the lecture. As can be observed from Figure 3 below, there is a list of existing topics located under the embedded YouTube clip visible at the top of the screenshot. The number of postings for each topic can be found to the right of each topic in the screen shot.

In the example in Figure 3, there is a total of 28 postings linked to six topics.

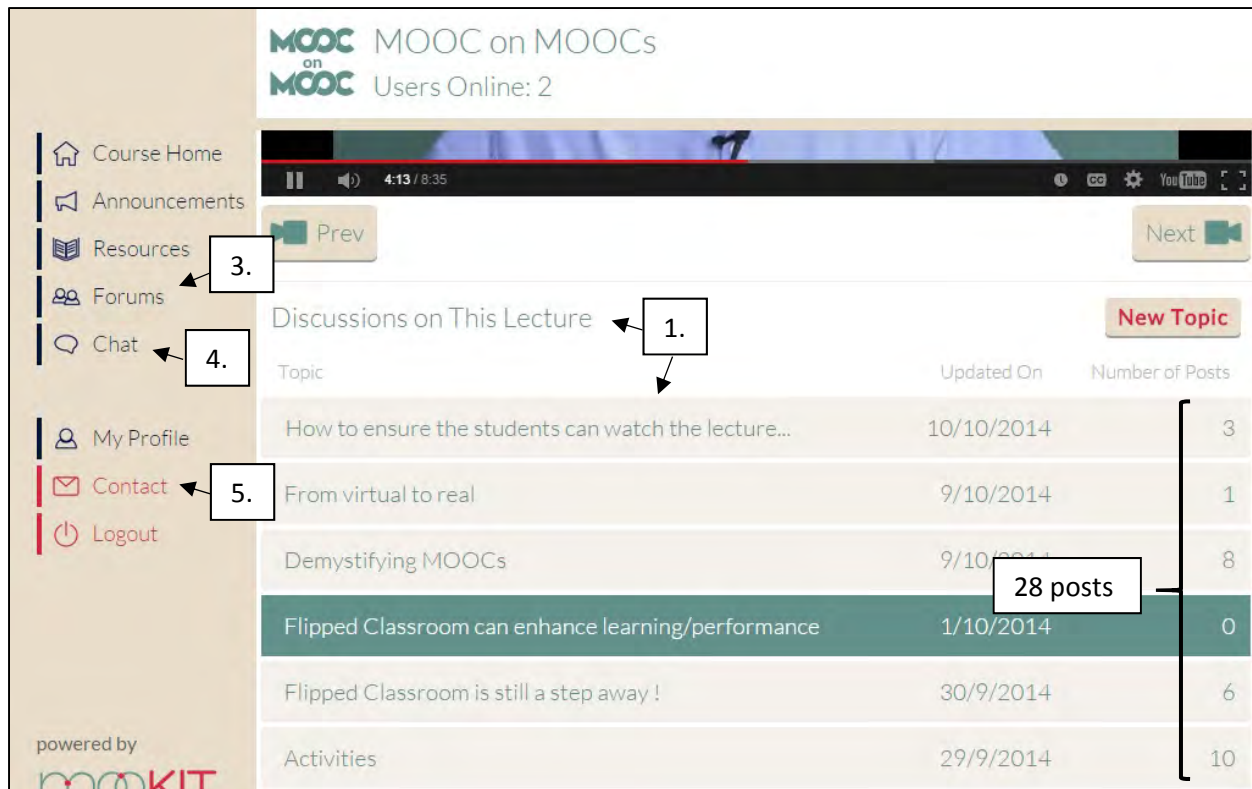


Figure 3: MoM Lecture Discussion

Communication between learners and between instructors and learners was facilitated through five channels. This included postings to (see Figure 3 for the location of these communication channels as designated by the number assigned in the list below):

1. Video lectures
2. Video assignments (this is absent from Figure 3)
3. Forums
4. Chat sessions
5. Contact mail (email embedded in the platform)

Registration was simple and required little personal information. An email confirmation was sent to the email address provided for verification purposes. Figure 4 is a screen shot of a pop up window that appears on the course homepage.

Figure 4: mookIT registration

Evaluator Comments

The LMS of mooKIT is intuitive. The navigation bar located on the left side of the platform acts as a gateway to access the entire course. The interface is clean and relies on little wording. This allows for ample open space allowing ease of navigation. Embedding five communication channels offers participants multiple pathways to engage with instructors.

For its purpose to deliver content and enable interactions with other participants or instructors, the LMS is exceptionally well-designed.

A summary of the method and volume of communication is presented in Table 5, located in Section III: Results. Some analytics are performed to offer insight into participant behaviour relative to posting comments.

Cost Analysis

A cost analysis framework employed in this subsection is adapted from a previous report authored by the evaluator (Perris, 2014b). Four stages are to be considered and are mapped according to costs, defined under two columns as: Low to Medium Costs; and High Costs. See Table 1 below.

Table 1: Cost Analysis Framework

Stage	Low to Medium Costs	High Costs
Pre-design (feasibility):	<ul style="list-style-type: none"> • Institutional interest and rationale • Drafting a budget • Recruitment of contributors (instructors, editors, web designer/ Programmer, support staff) and determining time commitments • Hosting MOOC/selecting LMS • Acquiring accreditation 	<ul style="list-style-type: none"> • Determining blue-print of course (i.e., content, delivery of content, assessment, length of course) • Draft script(s) of lectures • Hosting MOOC
Design:	<ul style="list-style-type: none"> • Designing content (using existing OERs, for example) • Method of analytics 	<ul style="list-style-type: none"> • Designing content (from scratch) • Instructional design
Development:	<ul style="list-style-type: none"> • Revise elements in Design Stage • Revise budget (where feasible) • Registration requirements • Quality Assurance mechanisms 	<ul style="list-style-type: none"> • Revise elements in Design Stage (include video production, editing) • Testing and refinement of LMS • Marketing
Delivery and Evaluation:	<ul style="list-style-type: none"> • Ongoing hosting costs (may change depending on enrolment) 	<ul style="list-style-type: none"> • Maintenance • Instructor time for teaching,

		facilitating, marking, administration
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The framework serves as a comprehensive breakdown of the processes involved with running a MOOC. The application and utility of this framework is dependent on the availability of information on a MOOC project.

In comparing the two columns in Table 1, it can be deduced that the highest costs are associated with course design and delivery. This usually falls on the shoulders of instructors, who often share some of the technical responsibilities in designing and running a course. Instructors for the MoM course shared many of the responsibilities listed in both columns. Considering there were five members in the course team and an additional eight members on the support team, it can be assumed that the aggregate number of hours devoted to the design and delivery of the MoM course was significant.

As noted in the earlier subsection on Funding, external funding for the course was derived from two primary sources:

- CDN \$15,000 from the Commonwealth of Learning
- USD \$15,000 from the Technical Education Quality Improvement Program

The funding from COL was devoted primarily to content development and to costs associated with recording and editing of video lectures. This included the costs of using a studio and hiring staff for editing and other technically related purposes. Funding from TEQIP was for the purpose of designing the mooKIT platform. The platform was to be used for the delivery of three courses, including the MoM course. The amount of USD \$15,000 was dispersed across these units. Although it may be simple to divide this sum in three to calculate the share of the TEQIP funding to the MoM course, there are other factors. The first course was offered in July, three months before the launch of the MoM course in September. Further, there was another MOOC, *Architecting Software for the Cloud*, which was also launched in September. Therefore ascribing a dollar amount from the TEQIP funding directly to the MoM course is challenging and impractical considering how these funds were utilized.

Evaluator Comments

The cost analysis presented above is limited by the availability of data. The most reliable information as it relates to discerning the cost to design and run the MoM course is the funding provided from COL. In addition to the challenge of calculating accurate costs of the mooKIT platform to the MoM course, there is also the challenge to calculate the cost of labour.

Existing literature on MOOCs aims to ascertain hypothetical costs in design and delivery. A report on MOOCs in North America by Fiona Hollands and Devayani Trithali (2014) examined

faculty time on an hourly basis to draw conclusions on the costs to design and to run a MOOC. Similar analyses have been conducted elsewhere (Colman, 2013).

Such analyses however, are highly variable. Details as granular as instructor experience in front of the camera (and therefore time devoted – or not – to re-takes and editing, for example), to designing a new platform or embedding instructor-participant interactive elements will impact time and costs. The wide discrepancies in labour costs between countries, and even within countries complicate any attempt to make generalizations. Hollands and Trithali admit that their cost analysis of a MOOC designed at a Midwest University in the US should factor, “that salary levels at this geographical location may be lower than national averages so that costs for the non-teaching personnel could be higher on a national average basis” p. 145).

In regards to the MoM course, the labour costs of the 13 individuals involved with its design and delivery were absorbed by their respective institutions and unavailable for this analysis. The matter of calculating such costs is further complicated by the fact that many of the members of the course team and the support team were simultaneously working on the MOOC, *Architecting Software for the Cloud*. These 13 individuals were also spread across three institutions in two countries.

The framework presented in Table 1 offers a glimpse of the numerous roles and responsibilities required to run a MOOC. It may be useful to ascertain hours of labour invested by designers and by other individuals who design and deliver their own MOOCs. Providing generalizations as has tended to surface in the literature is problematic due to the immense variation in MOOCs.

In regards to another matter regarding costs of a MOOC is a need to establish a commitment to re-use courses. Subsequent offerings of the MoM course, as well as the potential of the mookIT platform to be used more extensively, may prove to gain efficiencies, and spread the investments of funders and personnel across a greater distribution of learning opportunities.

Summary of Course

The MOOC on MOOCs course was designed to consolidate much of the information on this novel course format, while also engaging participants in some design principles of the course format and delivery mechanisms. The aims and objectives focused on providing information to participants on a range of topics that would furnish participants with a degree of knowledge in pursuit of designing or enrolling in MOOCs in future. This latter point is important and distinct from the focus of conventional xMOOCs which tend to replicate the university experience and provide courses for personal interest.

The focus on application in the MOOC on MOOCs course may push participants to design their own MOOC. This links back to the paradigm of *MOOCs for Development* cited at the beginning of the report. If MOOCs are to serve large learning populations with a focus on improving livelihoods through agriculture or healthcare, for example, then courses such as MoM should provide pointed information that participants can apply to their area of expertise. In this sense,

MOOCs should not be compartmentalized as fitting only within the realm of higher education, nor should they be only confined to be delivered over sophisticated computer technologies (see Mobile for Malis course identified in the subsection Origin of the MOOC on MOOCs Course).

The presentation of content is also unique. Drawing on disciplines from education, computer science, and sustainable development, the course appeals to a wide range of learners. Few will arrive at the course having been exposed to the depth and breadth of information provided in the MoM course.

The mooKIT platform can be characterized as highly intuitive for both content designers and for users. The architecture is based on open source software and is customizable. The added value of the platform's CMS is low demand on the server. In regards to the LMS, the platform facilitates an interface design that is intuitive and easy to navigate. Participants can readily verify their progress (i.e., what video lectures have been viewed) and can collect feedback from their peers. For the MoM course, the designers enabled multiple channels for interaction.

Overall, COL and IIT-Kanpur should be commended in regards to designing a course and an entirely new platform with the external funding received. Yet, again, it remains unclear what dollar amount can be properly calculated for the time spent on the MoM course by the course development team and the support team.

The ensuing section focuses on implementation and explores how instructors and participants engaged with the MoM course.

Section III: Results

This section is divided into three parts. First Instructor responses to the email questionnaire will be presented and analyzed qualitatively. Participant data from the online survey and some analytics of participant behaviour will follow. These two participant sources of data will include qualitative and quantitative analyses.

Part I: Instructor Responses

As noted in the Research Methods located in Section I, four instructors responded to the invitation to complete the email questionnaire, which included seven open-ended questions on the MoM course and three questions on the M4D course, of which several instructors had also served in a design role. A summary of the responses and reviewer comments are presented below.

1. What was/were your role(s) in design, development, or delivery?

Instructor 1: Design, development and delivery. Included: selection, creation and sequencing of content; selection and evaluation of mookIT platform; prompting discussion and responding to participant queries.

Instructor 2 & 3: Design, development and maintenance of mookIT; delivery of course lectures; grading of video assignments, responding to participant queries.

Instructor 4: Conceptualization, design, development and delivery of the course

Evaluator Comments

There is little variation in the roles of the instructors who belonged to the development team. Each instructor indicated having a role in the design, development and delivery of the course. Since a division of labour was not evident among instructors each instructor had to know, more or less, some information about all course content. An absence of specialist roles meant that instructors had to invest time in learning new content. This may have diverted time away from instructors focusing on their particular specialization.

2. What were your own goals/expectations for the MoM course relative to your investment of time and your own professional

Instructor 1: Creation of reusable content; harvesting new ideas from students; developing own skills in operating a MOOC (goals met)

Instructor 2: The feasibility of the platform to

learning? Were these achieved?
Why or why not?

accommodate the number of students (goal met – no major technical disruptions)

Instructor 3: Develop a no frills, intuitive online platform (goal met)

Instructor 4: Share knowledge about MOOCs; deepen teaching experience in MOOCs; test mookIT (goals met)

Evaluator Comments

Although the instructors' roles overlapped, their goals for the course were diverse. Comments from Instructor 1 were pedagogically oriented, whereas comments from Instructors 2 and 3 were more technologically oriented. Comments from Instructor 4 were more holistic focusing on multiple aspects of the course including enhancing learning, teaching and understanding technology.

3. How well do you think the course met learners' learning expectations?

Instructor 1: Based on content and volume of messages on forums, learners' expectations were met reasonably well; attributable to instructional design and mookIT platform.

Instructor 2: Level of participation and assignment quality suggests that the course met learners' needs.

Instructor 3: Content of participants' feedback suggests that expectations were met satisfactorily.

Instructor 4: Formal and chat room content indicated learner satisfaction. Assessment was not important to the course.

Evaluator Comments

The volume of positive feedback retrieved from video lecture postings and chat rooms were major indicators of participant satisfaction as interpreted by the instructors. Instructor 4 made a pointed comment noting, "assessment was not important to the course." This will re-surface in the following section on learner feedback as a point of contrast between instructors and participants.

4. What were your perceptions of the mookIT platform? Did it adequately support course delivery, course materials, course assessment, and student/instructor interaction?

Instructor 1: mookIT adequately supported the course requirements. Valuable suggestions were also compiled from instructors and learners.

Instructor 2: mookIT was adequate for the course.

Instructor 3: Features were developed in unison with the delivery of the course. In this sense, the platform's performance improved over time. It

supported and encouraged interaction between the participants and instructors.

Instructor 4: We were very happy with mooKIT, evidenced in its scalability to support many users despite the small size of the platform.

Evaluator Comments

Instructors indicated satisfaction with the platform although “it is difficult to be unbiased,” admitted one instructor. It should also be noted that the instructors made significant changes during the course. First, the instructors, at the request of participants, decided that an assessment activity should be implemented, which was the video assignment described in the previous section. The other significant change, linked to the video assignment, was to extend the course by one week. Again, participant input requested that more time was necessary to cover all content while also having sufficient time to complete and post the video assignments. These changes are unique and reflect a willingness of the instructors to support the “open” concept of the course, achieved through the aforementioned changes to accommodate participants’ learning.

5. Do you think the time spent (i.e., in general, including the team, not just yourself) on designing and running the MoM is cost-effective? Why or why not?

Instructor 1: The time spent was cost-effective. We deployed mooKIT on a cloud platform and content creation was distributed. Instructors and guest speakers recorded lectures independently. The model to develop and run this MOOC met this objective.

Instructor 2: No answer.

Instructor 3: The time spent to design and run the MOOC was cost effective. Active learner participation, satisfactory performance, and critical thinking made the learning process mutually beneficial for instructors and learners. With more advertising the amount of learning (and number of learners) could have been significantly higher.

Instructor 4: It is difficult to ascertain cost-effectiveness. We worked within the parameters of the budget.

Evaluator Comments

Answers varied depending on an instructor’s interpretation of the question. Instructor 1 and Instructor 2 interpreted cost-effectiveness relative to dollars and cents. Using external resources such as a cloud provider and the voluntary contributions of guest speakers enabled costs to run the course as affordable. Instructor 3, on the other hand, interpreted cost-effectiveness relative to the richness of the learning environment. Although this was positive and therefore cost-effective, Instructor 3 also acknowledged that greater advertising could have augmented enrolment. Such an outcome, however, may have required greater time on

the part of instructors, adding pressures to the cost-effectiveness to run the course.

6. Are there desirable attributes that students should possess to be successful in a course like MoM?

Instructor 1: Foremost is a genuine interest in learning. Second is comfort with using the Internet and computers in general.

Instructor 2: Familiarity with online technologies and active interaction between students.

Instructor 3: A desire to learn is most desirable including active participation and critical thinking. Further motivation behind taking an online course should not be certification, despite this common drive among students. Such motivation hinders the learning process somewhat.

Instructor 4: The most desirable attribute is motivation. If the learner can stay on the course for two weeks and participate in a question/comment or two, they will last the full course.

Evaluator Comments

Instructors' comments centred on technological ability and a desire to learn as important attributes to be successful in the MoM course. Instructor 3 lamented the importance of certification held by many participants, a position that the instructor believed may diminish the learning experience. Instructor 4 noted that there was a two-week threshold for students to become *hooked*; an outcome that the instructor believed can be derived from active participation. Yet activities to engage in critical thinking or participant interaction were not intentionally embedded in the instructional design of the course. The didactic nature of the course and absence of pertinent assessment of the course content limited opportunities to engage in critical thinking. Further, participation in chat sessions or other interactive discussions were not part of any assessment activity presenting little extrinsic motivation to post comments, reflections, etc.

7. If the course were to be offered again, what suggestions would you make for improvements to the MoM relative to design and/or delivery? Are there suggestions that would apply to designing and/or delivering a MOOC in general?

Instructor 1: A mobile app may enable more active learner-learner and learner-instructor engagement.

Instructor 2: To include more assignments as the one that was utilized in the current offering. In general, content drives enrolment. If it is organized and delivered well, participation will increase. Further, the platform needs to be simple and intuitive to use. This will facilitate easy access to content.

Instructor 3: Devise strategies to enable coherent discussion with learners and instructors (this was

lacking in MoM). Consider utilizing discussion as an assessment activity. Active participation should be a feature of any MOOC as it helps develop critical thinking skills.

Instructor 4: Assign the assignment at the beginning of the course and include more assessment. Learners seem to want this, to my bewilderment.

Evaluator Comments

Although there was some variation in instructors' suggestions for the MoM course, there was a common theme of assessment that was driven by participants' requests for such activities. Further, better co-ordination in participants' interaction, namely chat sessions, was also worth improving if and when the MoM course would be offered again.

Since several of the instructors were involved in the design or delivery of the Mobiles for Development (M4D) MOOC, three other questions were included in the instructor questionnaire as a means to compare experiences from the two MOOC projects. The questions are listed as follows:

8. If you were involved with the M4D MOOC, how would you compare/contrast your role(s) from each MOOC?
9. How would you compare/contrast instructional design from M4D to MoM? Were changes based on pedagogical approaches, content, or other? Explain.
10. What lessons learned from M4D were applied to MoM? Please consider design, development and delivery.

Evaluator Comments

Responses were limited as only two of the four instructors had previously been involved with the M4D course. They differentiated the MoM course as being more focused on content and application as compared to the M4D course which was more technically oriented.

Part II: Participant Responses, Independent Data

As described in Research Methods in Section I, participants were invited to complete an online questionnaire. The analysis begins with demographic data and other background information of participants. In total 185 participants submitted a completed survey. They are referred in this section as survey participants.

Demographics

Among the 185 survey participants, 110 were male, 67 were female and 8 did not respond to the question on gender.

The age range of the survey participants reflected a relatively normal distribution with the majority clustered in the middle age ranges between 17 to 54. The breakdown is provided in Figure 5.

In Figure 6 a clear majority of survey participants indicated their occupation as *Educator/Academic* (n=130). There were also a fair number of *Students* (n=22) and *Educational Administrators* (n=15). In regards to Figure 7, nearly all participants indicated their employment status as *Full time*.

Evaluator Comments

The most notable findings from this section were that a clear majority of survey participants identified their occupation as *Educator/Academic* and were employed *full-time*. One inference to be drawn is that the participation in the MoM course was to inform survey participants’ professional work – likely aligned to teaching, instructional design, online learning, or institutional policy on the use of MOOCs.

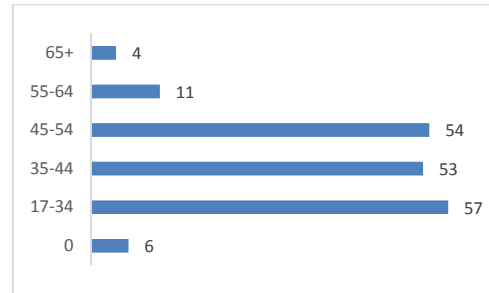


Figure 5: Age of Participants

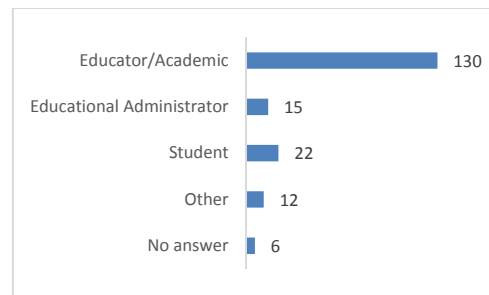


Figure 6: Occupation

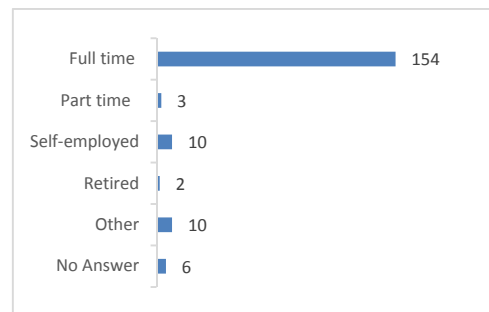


Figure 7: Employment Status

Access to Course

According to Figure 8, approximately two-thirds of survey participants accessed the MoM course from *Home* and one-third of participants accessed the MoM course from *Work*. In regards to bandwidth, data in Figure 9 indicated that nearly all survey participants had *Good* or *High* bandwidth. Small groups indicated using *Mobile based data* (N=11) and *Dial-up* (N=11). Data from Figure 10 indicates that survey participants primarily accessed the course using a *Laptop* (N=103), or *Desktop* computer (N=72).

Evaluator Comments

The findings reveal that a clear majority of survey participants accessed the course from home or work with good or high bandwidth and from a laptop or desktop computer. Few other generalizations can be made from this data. Mapping such data to geographical and other demographic information would offer better insights into issues of access. As will be noted in the qualitative analysis that follows, many participants emanated from emerging world countries, where the distribution of technology and bandwidth are far more uneven compared to what is available in industrialized countries. It is unclear if bandwidth, or other issues related to access may affected engagement in the MoM course for some participants.

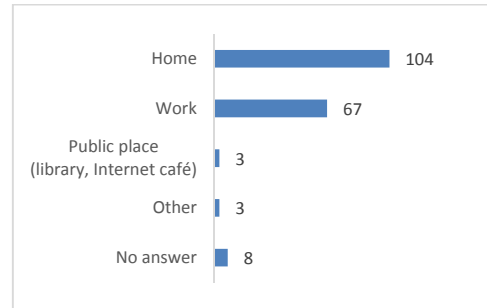


Figure 8: Location of Online Access

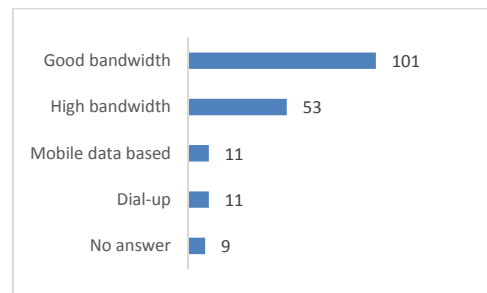


Figure 9: Bandwidth Used

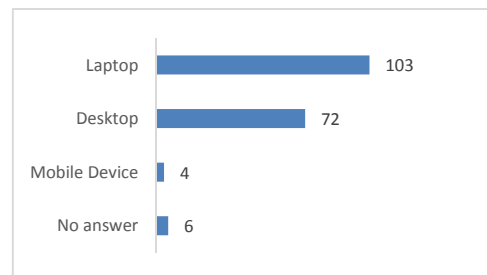


Figure 10: Device to Access Internet for MoM

Part III: Participant Responses, Dependent Data

In this section, survey participants' responses were based on their experiences of learning in the MoM course. The types of questions were forced answer and included Drop down, Likert, and Yes/No questions and Short answer which were open-ended questions. Questions that corresponded to Pre-Course, Post-Course and Future were listed under the appropriate subheadings.

Pre-Course - Quantitative

Table 2: Rationale for enrolling in the MoM course (Forced Choice)

Personal Interest	18
General knowledge	54
Professional Development	70
Create my own MOOC	34
No answer	9
Total Survey Participant Responses	185

Evaluator Comments

Over 100 survey participants indicated rationale to enrol in the MoM course was for *Professional Development* or *To create my own MOOC*. This maps well to the intent of training or application held by the instructors.

Few survey participants indicated enrolling in the MoM course for *Personal interest*, which has been shown to be a common rationale for enrolment in MOOCs.

Post-Course - Quantitative

Table 3: Satisfaction with MoM course features (Likert)

MOOKIT site was easy to use	4.56
The forums and chat sessions were useful	4.09
Assignment was relevant and helped me practice new concepts and skills	4.04
Presentations (slides, audio, video) were clear and audible	4.59
The delivery of the course was consistent with its stated objectives	4.53
Total Survey Participant Responses	185

Evaluator Comments

In Table 3, survey participants indicated high satisfaction regarding the course website, presentation of content and alignment of course delivery to the stated objectives (all three of these scores were 4.53 or higher). Scores were marginally lower in regards to the usefulness of forums and chat sessions, and the relevancy of the assignment.

The comparatively lower scores of the usefulness of the forums and chat sessions and the relevancy of the assignment may be linked to the lower level of priority or importance assigned

to these aspects in the course. Participation in both forums and chat sessions were voluntary and the assignment was a requirement only for those intent on earning a certification of competence (as opposed to earning a certification of participation, or no certification at all).

Table 4: Overall Perceptions of MoM Course (Yes/No)

	Yes	No	Total
Would you have taken this course if no certificate was offered?	143	42	185
Overall, are you satisfied with the quality of this course?	179	6	185
Overall, do you feel the presenters had a good knowledge of subject matter?	183	2	185
Would you recommend this course to others?	182	3	185

Evaluator Comments

For the four Yes/No questions, all survey participants' responses were decidedly in the affirmative (Yes) reflecting a high level of satisfaction with the MoM course. Also noticeable was that a number of survey participants (N = 42) indicated they would not have enrolled in the MoM course if a certificate was not awarded.

This finding links to the question on rationale in the Pre-Course subsection. In this question more than half of survey participants selected *Professional development* or *To create my own MOOC* as rationale to enrol in the MoM course. Having a credential such as a certificate would serve to add legitimacy to completing the course if to be used as a means of professional development, or to demonstrate competency as a potential designer of a MOOC.

This finding in Table 4 may also reflect a basic desire for institutional recognition for the time invested in a course.

Post-Course - Qualitative

There were five open-ended questions in the online survey. A thematic analysis of survey participants' remarks identified six common themes and included:

- Content (course content)
- Assessment (assessment activities)
- Interaction (between participants or between participants and instructor)
- Instructional Design (method of course delivery)
- Connectivity (Internet access to course)
- mookIT platform (perceptions of platform)

Each theme is accompanied with a summary of terms that support the theme. A selection of salient comments are also included.

Not all themes are represented under each question.

Was there a particular aspect of the course that you liked best? If so, what was it and why?

Content: The basics of MOOCs (history and utility), design of MOOCs, pedagogy (flipped classroom), and analytics were all valued.	“very necessary to have a theoretical foundation before moving to the practical content” “focus on technical aspects and application were tremendously helpful” “Flipped classroom,” “basics of MOOCs,” “architecture of MOOC” were stand out sessions
Assessment: Many learners found the assignment (to create a 300 second video about MOOCs) as highly enriching to encapsulate the knowledge acquired in the course	“The assignment was highly motivating” “Video assignment was practical and relevant. Nice to see all the variety in submissions”
Interaction: With peers, there was value in sharing background information and discussing course topics. With instructors, there was value in receiving timely and pertinent answers to queries.	“Forums were very informative and educational” “we were free to ask questions; received prompt answers, almost immediately” “I liked the way answers were being given and discussed by the instructors” “Prompt response from tutors bridged the distance and helped me tremendously” “a good mix of instructors, uniformly good communicators” “interactions with participants from other countries was a valuable learning opportunity”
Instructional Design: Learning by video lecture was popular. The length, content, and presenters received positive responses by many learners. Writtens scripts of dialogue added to the value learners placed on videos	“videos make concepts clear; the slides/pdfs are excellent learning materials” “I liked that experts were featured from a developing continent – I could relate to them”

– for efficiency and language. Learners also acknowledged that the course objectives were matched by content and delivery.

“I loved that there were lecturers from India to which I identify”
“Audio clarity [of videos] was excellent. Moreover, the content of the audio was given in text format – really helpful.”
“Presentation of videos with slides, timelines, pdfs of lectures and short time spans were ideal”

mooKIT Platform: There were several comments positively acknowledging the merits of mooKIT. This ranged from its versatility of access, to its intuitive use.

“mooKIT was great to use, including on a smart phone”
“I could use this in educating low-literacy adults and farmers”

Evaluator Comments

Comments were varied and pointed to satisfaction with the video lectures (quality and sequencing), assignments, communication channels, instructor response (quality and response time), and mooKIT platform (user-friendly and portability).

There were several interesting comments in regards to interaction. For example, survey participants acknowledged the benefit or value of having instructors/guest speakers and other participants who were from the same, or similar national or ethnic backgrounds. Particular reference was made to individuals who represented a South Asian or African ethnicity. Featuring instructors who live, work or emanate from the emerging world may add context and legitimacy to the sustainable development premise of the MoM course, and to MOOCs in general that are more regionally oriented. Most MOOCs cater to a western audience, yet have a global enrolment. There has been critique of neo-colonial undertones to these MOOCs (Altbach, 2013), perhaps more as a call that MOOCs need not be the authority of western institutions. Further inquiry may be warranted into the merits of contextualizing MOOCs. Like the appeal to have certification – to the point that this is conditional on enrolment – it might be the case that better efforts to contextualize content, and to promote such contextualization, may serve to enhance or sustain enrolment in MOOCs such as those designed by COL and IIT-K. Clearly, further research is needed to inform such a proposition.

Was there a particular aspect of the course that you did NOT like? If so, what was it and why?

Content: Overlap, or repetitiveness of content, particularly in videos was a common aspect of the course that learners did not like. Further, there was a desire for more technological content focused on software and hardware usage. This ranged widely from server hosting to

“Some of the lectures were repetitive and should have been avoided”
“There should have been less time explaining concepts and more time on instructional and technological design”

providing information on using a microphone or camera.

Assessment: Several learners wanted an earlier announcement about the assignment. Further, there was a desire for more variation and volume of assessment (formative and summative). The context of the assignment was limiting to some users for two reasons: lack of hardware (e.g., camera) and lack of technological expertise.

“The assignment schedule would have been useful to have in advance to budget time for the course”

“the course would have been better if there was a quiz or an assignment each week”

“Assessment through one assignment needs to be changed. Alternative assessments are needed to meet the learning level of all”

“the video assignment is not suitable for all – I did not have a camera or mic, so did not do it. A quiz would have been better”

“Teaching on technological content was lacking. I wasn’t able to do the assignment as I had limited technical knowledge.”

Connectivity: Learners noted problems with viewing videos, uploading their own video assignments, and lacking hardware to produce the video assignments.

“there were bandwidth limitations with downloading/watching videos”

“the video assignment was too big to upload”

“This course is mainly for those with high speed Internet connections.”

Interaction: There were many comments on the lack of relevance in the chat forums, or inability to readily find an important discussion thread.

“I wished to be notified in some way if someone responded to my comments”

“Chats were mostly hello types, not useful”

“I wanted discussions to be filtered and searchable”

“There could have been more one-on-one chat sessions with instructors”

“I could not participate in live chat sessions because of my location and schedule. More participation could have occurred if there were more live chat sessions”

“Enable email alerts for news or discussions – would prompt dormant people to participate”

Instructional design: Some videos were longer than the standard of ten minutes or less advocated by the instructors. Further, there were comments that lamented a lack of quality in the videos, or that greater interactivity was desired.

“Some videos were too long and did not follow the requirements laid down in the course for video length to be around 10 minutes (to not impact attention spans)”
“the quality/design of the course was uneven. Some of the lectures were very good, but some were much lower quality.”
“I found the lectures to be monotonous. Interactive lectures would have been more lively. On occasion I preferred the pdf files.”

mooKIT: A fair number of learners noted there were technological glitches with mooKIT. None, however, noted that this prevented them from completing the course.

“I could not access the platform reliably on a tablet”
“mooKIT does not open on Explorer regularly”
“It would be nice if the course started after the formal release of mooKIT”

Evaluator Comments

Critical feedback centred on the length of the videos, which some survey participants found to contradict the dictum of being eight minutes or less, as stated in one of the course’s video lectures on MOOC design. There was also overlap of content among the instructors and lack of organization in terms of the threaded discussions and notification of the assignment. The absence of regular assessment was a common criticism, but remedied somewhat by the inclusion of the video assignment.

Such criticisms should not be surprising, particularly for a course being offered for the first time. Larger issues that often accompany online learning initiatives such as platform failure, lack of response from instructors, or irrelevant content were minimal, if not non-existent. Nevertheless, the aforementioned criticisms are valid, and should be considered in any refinements to the MoM course if and when it is offered in future.

Future Offerings - Qualitative

What suggestions do you have for how we can improve this course (in its content, delivery, administration, or any other aspect)?

Content: Provide class/content on video production/editing; focus more on technical aspects of MOOC design (software and

“more critical perspectives of MOOCs”
“more time on skill development, quality and cost-effectiveness to implement the MOOC

hardware), provide transcripts for all video content.	platform”
Assessment: Many learners desired more formative and summative assessments, including more assignments. There was also interest in a more formal credential.	<p>“Every module should end with a quiz”</p> <p>“Completion of M4D, MoM, and future courses could comprise a formal credential. Perhaps with a fee.”</p> <p>“quizzes and assignments would improve engagement with the course”</p> <p>“small assessment activities will motivate participants. One needs to check understanding through answering questions to measure understanding.”</p>
Connectivity: Instructional design:	<p>“more email alerts about postings”</p> <p>“include assignments other than video production since it is a team effort and does not rely only on an individual’s understanding of the course.”</p> <p>“Archived question and answer facilities would help with content retention and lead to an FAQs section in future”</p>
Overall: A range of comments centred on a longer timeline for MoM, mainly about two months in duration rather than six weeks (it was originally five weeks, and extended to six). Further, several learners commented that better advertising of the course would increase participation. While this is likely obvious, it suggests that there are many others who would benefit from enrolling in such a course.	<p>“Extend the course and include more assignments”</p> <p>“Run the course for two months – many learners did not get enough time to fully participate in the course”</p> <p>“Course content was a little heavy under the given timeline”</p> <p>“Do more advertising so the course can reach more people; few knew of it”</p>

Evaluator Comments

A desire for assessments focused prominently in survey participants’ recommendations for future offerings of the MoM course. Interestingly, there was also comments on lengthening the course. The instructors already made adjustments to the course when it was realized that more time was needed. Yet, participants acknowledged that a course that ran for several more weeks may lighten the load of content presented each week and enable more assessment activities to be included.

What other short courses would you be interested in taking in the future?

Education Oriented:

- Instructional Design
- Research Methodology
- Educational Technology
- Open and Distance Learning
- Technical Vocational Education and Training
- Teacher Training
- Faculty Teaching

Development Oriented:

- Agriculture and Extension Studies (IT focused)
- Mobiles for Development
- Sustainable Development
- MOOCs for non-formal learners

Discipline Oriented:

- Nanotechnology/3D Printing
- Computer Science
- Health Sciences

Evaluator Comments

There range of suggestions for future MOOCs warranted a categorization that included Education Oriented, Development Oriented and Discipline Oriented courses. Some of the suggestions are suitable for short courses such as the MoM course, particularly under those listed as Education Oriented and Development Oriented. Considering the ideas of application and of training adhered to by the instructors of the course, future courses about instructional design, teacher training, agriculture and extension studies, and MOOCs for non-formal learners, may be suitable and within the expertise of the instructors.

Foremost, however, should be the reuse of the MoM course and the M4D course before it. Implementing suggestions or recommendations in this report are connected to the MoM course, with perhaps some applicability to other MOOCs.

Part IV: Participant Behaviour on Interactive Channels in the MoM Course

In this final part of Section III: Results, a summary of the method and volume of communication that occurred among participants in the MoM course is presented. For illustrative purposes, analytics are performed on two of the five communication channels: Video lectures and Video assignments. Findings of the qualitative analysis presented in Part III of this Section will aid in the interpretation of the analysis in Part IV.

The aim is to offer some insight into participant behaviour relative to posting comments.

Table 5. MoM Course: Volume and Type of Communication

	Between:	Synchronous or Asynchronous:	Location:	Number of Topics/Submissions/Sessions/Forums	Number of Participant Comments
Video lectures	Learner and Learner	Asynchronous	Course Home Page	395 Topics for 38 videos	1728 Comments
Video Assignments	Learner and Learner	Asynchronous	Week 3 lectures	111 Submissions	622 Comments
Pressing queries about Lectures	Learner and Instructor	Synchronous	Chat sessions	3 Sessions	423 Comments
Platform, Lectures, General topics	Learner and Instructor	Asynchronous	Forums	3 Forums	557 Comments
Non-pressing queries about course	Learner and Instructor	Asynchronous	Contact email	Not applicable	Unknown

As can be observed from Table 5, the most common form of communication as measured by volume of comments was through video lectures. Participants could create discussion topics and submit responses to discussion topics in a space located below the video lecture embedded in the moodle interface. The volume of postings was also high for video assignments and forums.

For illustrative purposes some descriptive statistical analyses were performed on postings for video lectures and video assignments.

In total, 38 video lectures were recorded and utilized to deliver content to participants in the MoM course. Video Lectures were divided evenly into two groupings: Lectures 1-19 and Lectures 20-38. Values were assigned to Video lectures based on the sequence of course content (e.g., the introductory course video was categorized as Video lecture 1). Table 6 provides a synopsis of the volume of interaction as measured by participants' postings.

Video lectures 1-19, which were aligned to Weeks 1-3, generated 228 topics and 1220 comments, or about 5.4 comments per topic. By contrast, video lectures 20-38, which were aligned to Weeks 3-5, generated 167 topics and 508 comments, or about 3.0 comments per topic. Additionally, there were topics created by learners which generated zero comments. In

Table 6: Analytics of Individual Lecture Comments

	Topics	Total Comments	Avg. no. comments/ topic	Number of Topics with Zero Comments
Video lectures 1-19	228	1220	5.4	21
Video lectures 20-38	167	508	3.0	42

Video Lectures 1-19, 21 of the 228 topics generated zero comments as compared to Video

Lectures 20-38, where 42 of the 167 topics generated zero comments. This data serves to show that the volume of comments for Video lectures declined as the course progressed. Analysis will follow later in this Section.

A similar method and calculation were carried out on volume of comments directed to Video assignment submissions, which were described previously in the subsection on Course expectations and certification.

Video assignment submissions were divided evenly into two groupings: Video assignment submissions 1-55, published between September 27 and October 8, and Video assignment submissions 56-111, published between October 8 and October 12. Video assignment submissions were assigned values based on the order of submission (e.g., the first Video assignment submission was assigned the value “1”).

From Table 7 it can be gleaned that Video assignment submissions 1-55 generated a higher number of comments than the latter grouping of Video assignment submissions. There were about 8.5 comments per assignment for assignments 1-55, as compared to about 2.7 comments per assignment for assignments 56-111.

Table 7: Analytics of Video Assignment Comments

	Total Assignments	Total Comments	Avg. no. comments/ Video assignment
Video assignment 1-55	55	469	8.5
Video assignment 56-111	56	153	2.7

The initial conclusion to be drawn from the analysis of comments posted to Video lectures and to Video assignments is that as the course progressed, interest waned in posting comments through either channel.

Yet, the pattern of postings, relative to the date of posting, do not support this conclusion.

The volume of postings for Video lectures began to taper off during Week 3. At the beginning of Week 4, postings for Video assignments commenced and increased steadily. A week and a half later, or by the halfway point of Week 5 (Oct. 8), the volume of postings for Video assignments started to drop. Postings for Video lectures continued to decline during this time. If the assumption is that interest waned as the course progressed, then why was there an increase in postings for Video assignments after there was a decrease in postings for Video lectures?

Several interpretations are offered to explain this unusual seesaw of activity by participants.

The steady decline of postings to Video lectures may be explained in regards to perceptions or content of the Video lectures. In the analysis in Part III of Section III: Results, survey participants

noted the redundancy of some Video lectures. Some also grew critical of the delivery of content characterized by an instructor speaking into the camera for the bulk of a Video lecture. This may explain the link in the decline in postings for Video lectures. Another possibility is the quality or content of the postings to Video lectures made by other participants. The analysis in Part III revealed that some survey participants were dissatisfied with the quality of postings. Further, some postings that started new discussion threads received zero comments. This may have acted as a means of discouragement for the 'owner' of the post, or as a deterrent for others to submit a posting. It is hard to contest that individuals sense (if not seek) validation when there is a response (or other activity) to their ideas. A final interpretation to the decline in postings to Video lectures is that participants may have diverted time from reading or submitting postings towards time needed to complete the assignment that was assigned during Week 3.

Interestingly, the observed decline in postings to Video lectures was followed by an upstart to postings for Video assignments. Video assignment submissions uploaded to the course website began on September 27, one day after the assignment was announced (and the conclusion of Week 3). A surge in postings to Video assignment submissions followed as more Video assignments were uploaded to the course website. The novelty of seeing other participants share their knowledge in a video may have acted as a jolt to re-engage with submitting postings. Part of this activity is likely linked to participants gathering ideas for their own Video assignments by viewing early submissions. A cursory review of some of the postings to Video assignments revealed that the content was short and often complimentary to the participant who submitted a particular video. In this sense, investing time to submit a posting may have been less time intensive than submitting a posting to a Video lecture. Another possibility to the surge in postings is that Video assignments engaged another group (or *type*) of participants to submit postings. These individuals may have been previously lurking only to start to submit postings at a later time in the course. The fact that postings to Video assignments eventually started to decline may have been a result of participants busily finishing their own Video assignments. 55 Video assignments were submitted in the final five days of the course.

In the broader picture, this unusual activity should serve as some encouragement to the designers and instructors of the MoM course. If students are jolted by a novel addition to the course, this may act as incentive to continue active engagement among participants in a MOOC. It may also serve to sustain participation over the duration of the course.

As important, this analysis opens up several pathways to pursue in further implementation of the MoM course, or others like it. What are the analytics around particular Video lectures? What do textual analyses of comments reveal relative to satisfaction, feedback, or learning among participants? How effective are changes to a course once it has begun? Are participants motivated by certain kinds of interactions with other participants such as Video interaction?

The intent of this analysis has been to illustrate some patterns of behavior that may reflect participation or interest on the part of participants in the MoM. These analyses may also be worthy of consideration for future research work into the behaviour of learners on MOOCs or other online courses.

Section IV: Summary

The report set out to conduct an evaluation of the course, MOOC on MOOCs, designed by partners at the Commonwealth of Learning and the Indian Institute for Technology, Kanpur. A third organization, the Technical Education Quality Improvement Program of the Ministry of Human Resource Development, India, played a secondary role in the creation of the course, with more involvement in funding the design of the mookIT platform.

The evaluation was comprised of two main parts. First, an evaluation of the course relative to aims, objectives, content, instructional design, assessment and platform. The second component of the evaluation was to present and interpret data retrieved from instructors and participants. This included a questionnaire, a survey and interactive patterns among participants in the MoM course.

The genesis of the MoM course was driven by the need to leverage technology to address issues of training and application for sustainable development in the emerging world. Seeded to a meeting on using MOOCs for augmenting knowledge and skills in agricultural practices, the MoM course was designed to expand on this idea to a wider audience. Enrolling experts from agriculture, sanitation, teacher training, healthcare and other sectors in a course to learn about instructional design and technology for large learning populations could be highly impactful to issues in sustainable development.

As such, the MoM course sought to embrace content delivery in a predominantly didactic orientation. The use of an xMOOC format, whereby content is presented by an instructor to participants, was a logical decision under the constraints of meeting learning objectives in a short five-week course. The range of topics were broad, yet complementary, and deemed suitable to appeal to participants from varying backgrounds in sustainable development, education and computer programming (and others). To enable peer-to-peer interaction, several communication channels were embedded in the mookIT platform. The platform was aesthetically appealing and easy to use with reference to navigation in particular. In regards to hosting and delivery, efforts were also made to appeal to individuals who would take on these roles in the implementation of a MOOC.

Though incomplete, the cost analysis suggested that the design team was highly efficient in utilizing the funding received from COL and TEQIP. Such efficiencies may be stretched further if the MoM course is offered again, and the mookIT platform has a decent shelflife as an open source platform. Yet, the highest cost associated with course design is human resources, or labour. Acquiring information on the number of person hours and the commensurate costs based on salaries and use of resources was unavailable in this report.

Assessment was an ongoing topic of interest throughout the course and focused prominently in the report. The desire of participants to have assessments led the instructors to create the

video assignment halfway through the course. This proved to have mixed results. Some participants lacked adequate skills, or bandwidth to complete the assignment. Many, many more participants did not submit an assignment. In the end, there were 111 video assignment submissions. Although assessment was favoured less by instructors, there is much value to utilizing assessment activities beyond assigning grades to participants. Checking understanding and measuring the acquisition of content can be highly motivating to participants. Feedback on misunderstandings may prompt participants to deepen their understanding by reviewing lectures, posing questions, or seeking information elsewhere that complements the course content. Utilizing assessment as a means to augment learning should be considered by the design team.

Some analytics revealed that patterns of peer-to-peer interaction fluctuated in the course. Postings of topics and responses to Video lectures were popular at the beginning of the course, but gradually waned. A similar pattern was observed in the posting of comments to Video assignments which also waned over time. Yet, the latter avenue for posting comments grew as postings for Video lectures was in decline. Further analysis on fatigue, sequence and relevance of content, value and relevance of comments, and assignment expectations may shed more light on how participants learn and interact in the MoM course. The assumption to this point is that postings are important to the aims and objectives of the course. If so, incentivizing postings through assessment, for example, may be worthwhile for future offerings of the course. Additionally, more reliance on analytics could yield purposeful and unexpected results. It would have been hard to predict that the volume of participants' postings would fluctuate as it did in the MoM course.

It seems important to acquire information about learning expectations prior to and during the delivery of the course. The instructors are commended for responding to in-course requests by participants. Creating the video assignment and extending the course for one week were direct responses to participants' input. Having posted questions prior to the launch of the course may have minimized any frustrations held by participants and may have expanded the number of video assignment submissions.

Overall, the course team and the support team are commended for designing a novel course, and for the commensurate quality of the content and instructional design. The opportunity for participants to communicate through five separate channels is unique and proved to be highly regarded by participants. This was complemented by the work of the instructors who responded at all hours, and with regularity, to participants' queries. The mooKIT platform also was highly functional and may serve as a formidable platform in the future of course delivery with emphasis on MOOCs.

The MoM course, and the M4D course before it, should be reused to ascertain the sustainability of such MOOCs, and to implement, or test some of the findings presented in this report.

Section V: Recommendations

A series of recommendations have been made based on the evaluation carried out in this report. The recommendations serve to offer some guidance and advice to staff at the Commonwealth of Learning and the Indian Institute of Technology, Kanpur who were involved in the MoM course. Other individuals or organizations may find relevance to their own plans or initiatives in the recommendations that follow.

These are divided into recommendations for refinement and recommendations for continuation.

Recommendations for Refinement

1. Infuse assessment activities into the course, or into future MOOC initiatives. These should be both formative (at intervals) and summative (at the conclusion of the course). Assessment activities should be determined prior to launching the course and should be included in the description of the course. Grading criteria, if applicable, should also be defined and available to participants in advance.
2. Embed a needs analysis prior to launching future implementations of the course. Early registrants may provide information which will aid instructors to align their expectations of the course with those of learners. Refinements may then be feasible prior to the start of the course.
3. To scale or not to scale. The MoM course attracted 2,344 participants and the M4D course offered in the fall of 2013, which involved the same organizing institutions and similar instructors, drew 2286 participants. Although active participants numbered fewer than actual enrolment in either course this may have been a blessing in disguise. Considering the emphasis placed by the development team on instructor presence online, the handful of instructors would have had far greater commitments to interact if there were more active learners. Preparing for such occurrences relative to scale should be included in the design of a MOOC. At what point might too many participants compromise the quality of interaction? Weighing the merits of enrolment growth and manageability relative to supporting adequate communication and assessment should also be considered. This also factors into the extent of marketing.
4. In future offerings of the MoM course, considerations for adding topics/content on quality assurance and on the application/training nature of COL/IIT-K MOOCs should be considered. As a common criticism among participants was the repetitiveness of content, better complementarity between video lectures is advisable.

5. Explore reasons for participant fluctuation in postings, or consider monitoring postings in future course offerings. The data revealed a drop in posting to Video lectures followed by a spurt of postings to Video assignments. Subsequently there was a drop in postings to Video assignments as well. Reasons for this occurrence are unclear, but may have been rooted to the novelty of the Video assignment just as participants became less enthusiastic, or busy, with viewing and commenting on Video lectures. The occurrence raises more questions than possible answers. As such, greater attention to participant behaviour during the course may serve to make changes, as the MoM design team demonstrated well in other areas during the delivery of the course.
6. Consider mechanisms to provide automatic updates to participants (e.g., email notification) when new information is available such as announcements of new participant postings.

Recommendations for Continuation

1. Offer both the MoM and the M4D courses again. Both can be described as novel and successful as measured by enrolment and participant satisfaction. The instructors could anticipate to gain more efficiencies in terms of time commitment as a result of their growing expertise.
2. The mooKIT platform is exceptional in its design and performance, particularly considering it was launched as a beta version for the MoM course. Compared to other platforms, mooKIT is intuitive to use and aesthetically appealing. It also proved to be functional across devices (e.g., tablets and mobile phones). On the design side, the platform has been constructed to be customizable and of low demand on a server. In combination, the features of the mooKIT platform will be attractive to individuals or organizations interested in pursuing MOOC initiatives independently. Its growth is promising.
3. The formula espoused by the course team relative to design, orientation, and application should be continued and advanced. The selection and design of content was eclectic and appealed to a broad range of learners. The design of the mooKIT platform was intuitive and sophisticated in its simplicity. It greatly improves on existing platforms and its feature as open source lends itself to great potential. The orientation of the course as open should be commended. Instructors made bold changes on the fly, including devising a Video assignment (and facilitating peer feedback) and extending the short course by one week. Such changes require a strong team that is able to

collaborate and cooperate at a moment's notice. The fact that this occurred predominantly between Kanpur in India and Vancouver in Canada makes these efforts all the more impressive. It is perhaps having an eclectic team that such changes were possible. The concept of the course team central to course design in the Open and Distance Learning milieu, and used in the MoM and M4D courses, should be contemplated and researched by an individual or organization interested in the design and delivery of MOOCs. Finally, the concept of application, where content is geared towards training and skill development, is an astute approach that maps well to the concept of sustainable development to which the MoM course is focused.

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Appendix A: Instructor Questionnaire

Evaluation Questions for MOOC on MOOCs

Prepared by: Kirk Perris, PhD

Preamble:

Thank you for agreeing to participate.

The questions pertain to the MOOC on MOOCs (MoM) course, offered by the Commonwealth of Learning and the Indian Institute for Technology, Kanpur, from September 5, 2014 to October 12, 2014.

Please be as detailed and as candid as possible. In the write-up I will endeavour to safeguard the anonymity of respondents and will identify no one by name.

If you have any questions or concerns, please email kirk.perris@utoronto.ca

Essential Questions:

1. What was/were your role(s) in design, development, or delivery? Please be as detailed as possible.
2. What were your own goals/expectations for the course MoM relative to your investment of time and your own professional learning? Were these achieved? Why or why not?
3. How well do you think the course met learners' learning expectations (i.e., instructional design, assessment and credentialing, collaboration and effective participation, technological requirements, copyright and intellectual property, costs, differentiation among MOOCs)
4. What were your perceptions of the mooKIT platform? Did it adequately support course delivery, course materials, course assessment, and student/instructor interaction
5. Do you think the time spent (i.e., in general, including the team, not just yourself) on designing and running the MoM is cost-effective? Why or why not?
6. Are there desirable attributes that students should possess to be successful in a course like MoM? Please elaborate.
7. If the course were to be offered again, what suggestions would you make for improvements to the MoM relative to design and/or delivery? Are there suggestions that would apply to designing and/or delivering a MOOC in general?

Optional Questions:

8. If you were involved with the M4D MOOC, how would you compare/contrast your role(s) from each MOOC?
9. How would you compare/contrast instructional design from M4D to MoM? Were changes based on pedagogical approaches, content, or other? Explain.
10. What lessons learned from M4D were applied to MoM? Please consider design, development and delivery.

-- Thank you!! --

Appendix B: Learner Questionnaire

1. I am (occupation)
2. I am (gender)
3. I am in the following age group (17-34; 35-44; 45-54; 55+)
4. I am (employment status)
5. My connectivity was mainly (location of Internet access for the course)
6. I mainly used the following device to participate (Laptop; Desktop; Mobile device)
7. MOOKIT site was easy to use (Likert 5 point scale)
8. The forums and chat sessions were useful (Likert 5 point scale)
9. Assignment was relevant and helped me practice new concepts and skills (Likert 5 point scale)
10. Presentations (slides, audio, video) were clear and audible (Likert 5 point scale)
11. The delivery of the course was consistent with its stated objectives (Likert 5 point scale)
12. Would you have taken this course if no certificate was offered? (Yes/No)
13. Overall, are you satisfied with the quality of this course? (Yes/No)
14. Overall, do you feel the presenters had a good knowledge of subject matter? (Yes/No)
15. Would you recommend this course to others? (Yes/No)
16. Was there a particular aspect of the course that you liked best? If so, what was it and why? (Open)
17. What suggestions do you have for how we can improve this course (in its content, delivery, administration, or any other aspect)? (Open)
18. Was there a particular aspect of the course that you did NOT like? If so, what was it and why? (Open)
19. What other short courses would you be interested in taking in the future? (Open)
20. My rationale for enrolling in the course was (Personal Interest; General Knowledge, Professional Development; Intend to design a MOOC)
21. How did you hear about MOOC on MOOC? (Open)

Appendix C: Sample Grading Criteria for Video Assignment

Assignment	Grade	
<p>Methodology: The video was reviewed by 2 independent instructors on 14 parameters. The grades on each parameter were then consolidated by a Senior Instructor. The quality parameters are categorized under 4 heads and indicate the key focus areas when producing a lecture for an online course.</p>		
<p>Head 1 - Content:</p>		
Focus: Okay	Engagement: Not Engaging	Learning Takeaways: Ambiguous
<p>Head 2 - Presenter:</p>		
Screen Time: Too Much	Speech Clarity/Talking Speed: Okay	
<p>Head 3 - Technical Aspects: Video</p>		
Camera Stability: Good	Lighting: Too Dark	Video Clarity: Okay
Editing: Okay	Shoot Setting: Okay	
<p>Head 4 - Technical Aspects: Audio</p>		
Audibility: Inaudible	Noise: Some Noise	Synchronization: Poor
<p>Overall Grade: B</p>		