International Journal of Applied Research

Sumeet Malik
Academic Coordinator
(Management Stream)
Consortium for Educational
Communication An Inter-
University Centre of
Excellence by UGC

MOOC (Massive Open Online Courses) – A study on their best features

Sumeet Malik

Abstract
Massive Open Online Courses or MOOCs have taken the Education world by storm ever since their introduction. This paper, after giving a small introduction to the concept of MOOCs and their landscape, looks at their best features. An exhaustive study of the popular platforms has been conducted to identify the best features of MOOCs

Keywords: MOOCs, Coursera, EdX, MOOCs features, Indian MOOCs

Introduction
Concept and Definition
The concept of MOOCs is still evolving with the technology and from learnings acquired by conducted MOOCs. Generally it is considered an online course aimed at unlimited participation through internet devices that use traditional e-learning resources like video lectures, in-lecture quizzes, readings and weekly quizzes and assignments along with interactive user forums to clarify concepts and enhance learning by providing a social learning experience to the students.

Structure of MOOCs
A typical MOOC has instructional material using Four Quadrant Approach (Video Lectures, Demonstrations, Quizzes and Supplementary Reference Material) which is developed before hand by Course Instructor(s) lead academic team consisting of Academic Associates. The course lessons are then released on a weekly basis along with live forums which may be used for weekly assignments, concept and doubt discussions and enhancing student's/learner's network. These forums are constantly moderated and reviewed by the Academic team. The course ends with a final examination that is proctored or in the form of assignment.
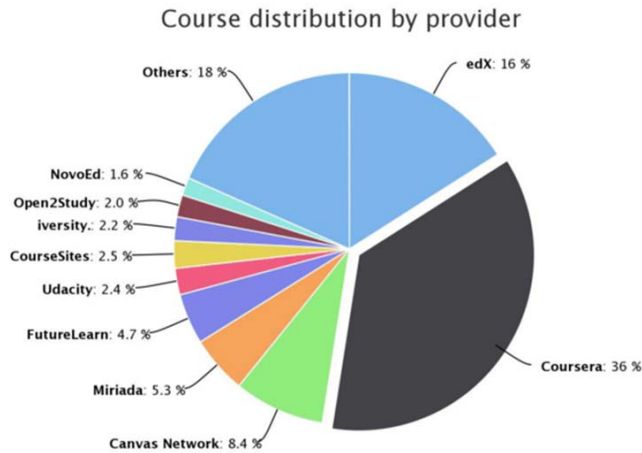
Features
Some of the distinguishing features of MOOCs are:-
- Massive – MOOCs can have a large number of participants. It is not uncommon for some of the popular MOOCs to have over lakh participants.
- Open – Anybody who is desirous of learning can join a MOOC without any formal qualification restriction. Of course the MOOCs state pre-requisites for a particular course but they don't stop any learner from joining in.
- Interactive – MOOCs are highly interactive where students not only interact with the Instructor but also with fellow cohorts and thus collectively figure out answers.
- Four Quadrant Approach – MOOCs follow the four quadrant approach which enrich the instructional material by including content based lecture videos, animations or interactive simulations, supplementary resources like case studies, wiki development of the course, open content available on the internet, etc. and problems, quizzes and assignments. Information and communication Technology is used to its fullest capabilities to enrich the courseware and delivery.

MOOCs Components and Guidelines
As MOOCs have evolved some of the best practices have helped to zero in on the best features. The following graphic shows the major MOOCs platforms [1].

Correspondence:
Sumeet Malik
Academic Coordinator
(Management Stream)
Consortium for Educational
Communication An Inter-
University Centre of
Excellence by UGC

Course distribution by provider

For the sake of better understanding, the features are categorized into three main components associated with MOOCs:-

- Course Curriculum Development and Planning
- Educational Material Development
- Implementation [2]

I. Course Curriculum Development and Planning
The course curriculum needs to be developed keeping in mind the learning outcomes for students that will support learners in acquiring target knowledge and skills. The components are:-

Title
The title of the course should be descriptive and appeal to the curiosity of students. It should mention the name of the subject with a descriptive phrase. It should not be longer than 12-15 words.

Credits for the course
The credits of the course should be clearly mentioned. If it is a non-credit course, it should be mentioned.

Course Promo
A promotional video talking about the course objectives, learning outcomes, brief structure and engagement time should be prepared and put on the course page before the course commencement. The video should not exceed three minutes and should be inviting for students.

About the Instructor(s)
A brief biography of Instructors including their career highlights, research areas and Institute affiliations should be mentioned. A photograph should accompany the biography. The introduction should not exceed more than 100 words.

Duration
The duration of the course could be anywhere from 4 – 12 weeks based on whether it is credit or non-credit based course. The course duration should be mentioned clearly.

Category/Stream
The subject category in which the MOOC falls should be mentioned. If the course is inter-disciplinary, then all the streams should be mentioned.

Pre-requisites
The pre-requisites for the course should be mentioned. If available, link(s) to other MOOCs should be inserted here.

Course Objectives
The course objectives and learning outcomes should be clearly mentioned in a succinct way. The learning objectives should be written keeping the target audience in mind.

Lesson Plan
A topic-wise lesson plan should be created which should include assignments, readings, quizzes, activities and any additional resources. The lesson plan should map the learning objectives.

Additional Requirements (if any)
If the course requires any extra material, resources, software or hardware, then it should be clearly spelt out. Links to any open sources can be inserted.

Honor Code
The Academic Honor Code should be spelt out which student has to accept at the time of joining the course.

Industry Partners (if any)
If the MOOC has any Industry partners, they should be mentioned.

Related Courses
The Related Courses should be mentioned along with the course page links.

Assessment
The assessment strategy should align with learning outcomes. The assessment strategy should be clearly spelled out here. It should include what kind of assessments (exercises, in-lecture quizzes, post assessment quizzes, etc.) along with their relevant weightage, the students will go through the course. It should also mention if the student will go through a proctored exam in case of Credit-based courses.

Engagement Time
Engagement time, total time required for viewing of content, attempting quizzes and assignments and reading material from reading list or additional sources, may vary for different courses and may range from 3-10 hours per week depending on the course rigour. Engagement time should be mentioned clearly to set the expectations of students straight.

II. Education Material Development
The educational material should be developed keeping in mind that the material supports active learning and builds foundational knowledge of students.

Educational Videos
Videos should include in-lecture quizzes or encourage students to pause and deliberate on questions covered in video topics. The duration of the video should range from 6-10 minutes depending on the topic. The instruction on the video should be engaging and encourage students to use additional material in the course.

Assessment Options
Homework and Assessment Options and Ideas
a. Multiple choice test if applicable (quiz tool)
b. Homework assignment (quiz or programming assignment)
c. Write a commentary, review, comparison, analysis, and observation within your community, reflection or other for homework (peer assessment).
d. Response to a text, video or other media object for homework (peer assessment).
e. Prepare a presentation on x and upload (text, photo, video, PPT).

Technical Requirements
The videos need to be in MP4 format optimized for Web-delivery. Assessments and Transcripts should accompany the videos. Assignments and Related Material should be in a downloadable format.

III. Implementation
MOOCs implementation features ensure the optimum balance between instructor led learning, individual learning and social learning.

Forums Monitoring and Moderation
Academic staff should be actively participating in monitoring and moderating the forums. The office hours/ hours of communication should be clearly mentioned by the academic staff.

Email/Communication
Academic staff/ instructor(s) should keep regular email communication with students with announcements, any new developments in the field of study or complimentary subject material to encourage student participation. The students should also be encouraged to collaborate through course forums and network outside of course.

Social Networks
Academic staff should use social networks like Facebook, Twitter, Google+ etc. to make announcements and share information. This will encourage learners to form and keep networks outside of their course.

Frequency of Interaction with Instructor(s)
The Instructors can hold web video conferences or live chat to address students' questions and to keep them motivated. The frequency and mode of communication should be clearly panned and mentioned.

Deadlines
A separate communication can be sent to students for quiz/assignment dates.

Ratings
Students who finish the entire course should have the option of rating the course on a 5 point scale and also write a brief course review.

Certification
Learners can get a certificate after they have attended all the classes and submitted the assignments/quizzes. For credit based courses, proctored examination, ideally at the computer lab of the institution is recommended.

Peer Assessment
Peer Assessment can be an important element of student Assessment. The courses which plan to use peer assessment should develop a rubric which aligns with learning outcome. Here we have an example with lists the dimensions of rubric for reflective writing piece.
Example dimensions for a reflective writing piece
o Depth of reflection
o Use of textual evidence and historical context
o Language use
Sample rubric is available in exhibits

Exhibits

Sample Course Outline of 6 week MOOC course [3]

Week	Learning Objectives	Contents	Graded Assessments
1	To briefly describe … To explain the … To write ….	Module 01 - Course Overview Handouts: PPT slides in PDF	Module 01 Graded Problem Tasks Lab 01 -….
2	To use.. To utilize … To explain …	Module 02 – Handouts: PPT slides in PDF	Module 02 Graded Problem Tasks Lab 02 - ….
3		Module 03 - … Handouts: PPT slides in PDF	Module 03 Graded Problem Tasks Lab 03 - …
4		Module 04 - Handouts: PPT slides in PDF	Module 04 Graded Problem Tasks Lab 04 - ….
5		Module 05 Handouts: PPT slides in PDF	Module 05 Graded Problem Tasks Lab 05 - …
6	N/A	Exam Handouts: Scope of Exam in PDF	Exam

Sample Reflective Writing Cuberic [4]

Skill	5	4	3	2	1
Depth of reflection	Demonstrate a conscious and thorough understanding of the writing prompt and the subject matter. This reflection can be used as an example for other students.	Demonstrate a thoughtful understanding of the writing prompt and the subject matter.	Demonstrate a basic understanding of the writing prompt and the subject matter.	Demonstrate a limited understanding of the writing prompt and subject matter. This reflection needs revision.	Demonstrate little or no understanding of the writing prompt and subject matter. This reflection needs revision.
Use of textual evidence and historical context	Use specific and convincing examples from the texts studied to support claims in your own writing, making insightful and applicable connections between texts.	Use relevant examples from the texts studied to support claims in your own writing, making applicable connections between texts.	Use examples from the text to support most claims in your writing with some connections made between texts.	Use incomplete or vaguely developed examples to only partially support claims with no connections made between texts.	No examples from the text are used and claims made in your own writing are unsupported and irrelevant to the topic at hand.
Language use	Use stylistically sophisticated language that is precise and engaging, with notable sense of voice, awareness of audience and purpose, and varied sentence structure.	Use language that is fluent and original, with evident a sense of voice, awareness of audience and purpose, and the ability to vary sentence structure.	Use basic but appropriate language, with a basic sense of voice, some awareness of audience and purpose and some attempt to vary sentence structure.	Use language that is vague or imprecise for the audience or purpose, with little sense of voice, and a limited awareness of how to vary sentence structure.	Use language that is unsuitable for the audience and purpose, with little or no awareness of sentence structure.
Conventions	Demonstrate control of the conventions with essentially no errors, even with sophisticated language.	Demonstrate control of the conventions, exhibiting occasional errors only when using sophisticated language.	Demonstrate partial control of the conventions, exhibiting occasional errors that do not hinder comprehension.	Demonstrate limited control of the conventions, exhibiting frequent errors that make comprehension difficult.	Demonstrate little or no control of the conventions, making comprehension almost impossible.

References
1. https://www.edsurge.com/news/2014-12-26-moocs-in-2014-breaking-down-the-numbers
2. University of Toronto, Design and Development Guidelines, Massively Open Online Courses, MOOC, February 2013
3. http://www.ocw.utoronto.ca/wp-content/uploads/2013/05/MOOC-Design-and-Development-Guidelines-2-Feb-2013.pdf
4. Edx Platform - https://www.edx.org/
5. Lesson Rubric Sample
6. http://www.readwritethink.org/files/resources/lesson_images/lesson963/Rubric.pdf