

## **Expectations from MOOCs – Are they Effective?**

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### **Abstract**

MOOC has been a recent trend in the western countries. This paper explains students' inclination and outlook about studying MOOCs and highlights the criteria that make MOOCs an Effective learning environment. The study was compiled qualitative methodology which included the use of an online survey. Specifically, probe MOOCs design elements and reasons for influencing the competencies of students to impact their participation in MOOCs. Effectiveness of MOOC is influences by factors such as Openness, Multimedia, Design and Communication. The outcomes of this research may boost up students' continuity and may help educators develop constructivist MOOCs.

Keywords: MOOC, Effectiveness, Expectation, Openness, Multimedia

### **1. Introduction**

2. Massive open online course (MOOC) is a course that's based on web and is obtainable for free to any individual from any corner of the globe. There is availability to superior quality learning materials (Jordon K, 2014). They are preconceived as learning environments worldwide which consists of participation from all over the world which can create, research and utilize open educational resources (Kop & Carroll, 2011). For involving oneself in MOOCs, there is no specified formal obligation from anyone from any geographical location. The only requirement will be an internet connection to participate. MOOCs comprises of lecture videos most of which are segregated into 10-15 minutes along with educative tasks of both individual and group.
3. A MOOC may or may not be as structured as a course at the University. MOOCs may not always intend to provide academic credits; there are possibilities of the same facilitating certification, job opportunities and further studies (Bayne 2014). It was in 2008 that the word MOOC came into existence by Dave Cormier who belonged to the University of Prince Edward Island. This was for a course given by the University of Manitoba, "Connectives and Connective Knowledge". The audience for this course consisted of 25 tuition-paying participants from university and 2,300 non-paying participants who were a part of general public which took up the course online. RSS feeds were seen for the

material. It was conducted through a variety of platforms which consisted of Moodle (a learning management system), blog posts, Second life and real-time meetings online.

4. Open Courseware (OCW) by Massachusetts Institute of Technology (MIT) was the first large group of MOOC resources which was made accessible by the university in 2011. This was followed by the launch of edX by MIT and Harvard in 2012 to promote MOOCs.
5. There has been a rapid change in higher education across the globe. Many traditional approaches and assumptions can be disrupted by MOOCs keeping in mind the innovations that are taking place (Perna, L et al., 2014). HEA has taken the forefront to research a phenomenon which is most likely to create a strong place for itself in the landscape of higher education. The study highlights the possible strengths and weaknesses of MOOCs, methods in which new opportunities can be created for those who wish to engage in continuing professional development and also learning based on work. This can happen not only informal but also in informal ways of education. There is also a suggestion that UKES would come up with a helpful and booming basis for extended studies in investigating the MOOC's engagement by the learners. The most important finding captured here is that when certain conditions are taken care of, the participants of MOOCs experience high quality and engaged learning. Understanding MOOC perspectives
6. There has been a rapid change in higher education across the globe. Many traditional approaches and assumptions can be disrupted by MOOCs keeping in mind the innovations that are taking place (Perna, L et al., 2014). HEA has taken the forefront to research a phenomenon which is most likely to create a strong place for itself in the landscape of higher education. The study highlights the possible strengths and weaknesses of MOOCs, methods in which new opportunities can be created for those who wish to engage in continuing professional development and also learning based on work. This can happen not only informal but also in informal ways of education. There is also a suggestion that UKES would come up with a helpful and booming basis for extended studies in investigating the MOOC's engagement by the learners. The most important finding captured here is that when certain conditions are taken care of, the participants of MOOCs experience high quality and engaged learning. Understanding MOOC perspectives.

## **7. LITERATURE REVIEW**

The existing literature has been broken down into two parts. The first part analyses and summarizes past fusion of MOOC literature. The second half narrows down to specific gaps that are found in the literature which are answered by this study. Many researchers have made an attempt to analyze the literature of MOOC, most important being Ebben and Murphy (2014) many diverse aspects of literature can be found in reviews. For instance, the students' and instructors' perspectives were studied by Hew and Cheung (2014) and the proof for the MOOCs

role as a disruptive force was focused by Jacoby (2014). In spite of variety in individual reports, many themes have come up. We conclude the most important of such themes as: differences between cMOOCs and xMOOCs impacts of MOOCs on education, demographics of MOOC users, and challenges for MOOCs. Every one of five older reviews of the literature of MOOC differences between: cMOOCs and xMOOCs. MOOCs are explained like “based on principles of connectives, openness, and participatory teaching” (Jacoby, 2014), and “human agency, user participation, and creativity through a dynamic network of connections afforded by online technology” (Ebben & Murphy).

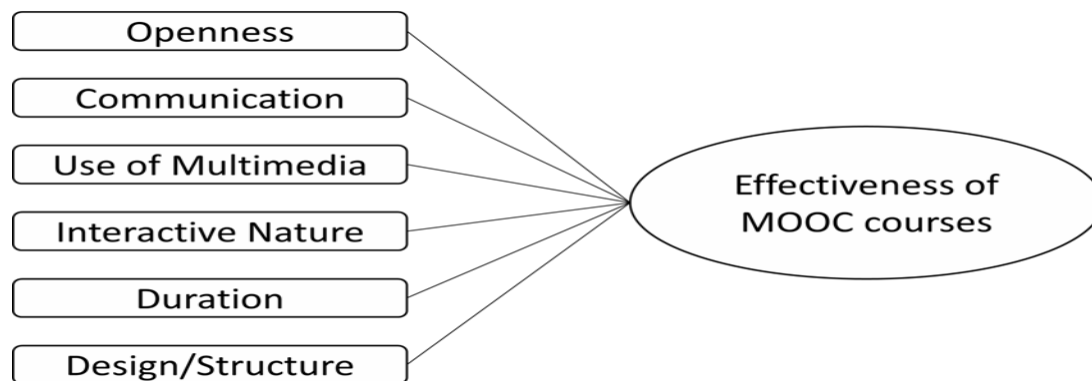
In disparity, xMOOCs are explained as “following a cognitivist – behaviorist approach” (Hew & Cheung, 2014) and looks like “traditional teacher-directed course, yet automated, massive and online” (Kennedy, 2014). But now many xMOOCs has been increasingly growing. The orderly categorization of cMOOCs and xMOOCs has made way for Ebben and Murphy (2014) to explain them as two different phases of the phenomenon of MOOC, highlighted that most of the earlier research on MOOCs has concentrated on the cMOOCs category.

Much of analysis concentrates on philosophical changes information and delivery of cMOOCs and xMOOCs. One difference between cMOOCs and xMOOCs which was seen in most of the review was the idea of openness.

One difference that was seen the discussion in many reviews between cMOOCs and xMOOCs boiled down to the idea of openness. The crux of the study according to Jacoby (2014) and Kennedy (2014) about cMOOCs that was less seen (or could be that it was differently stated) in xMOOCs was openness. In the literature, Jacoby (2014) explains about openness with respect to clarity, delivery, of course, approach to course, content of the course and the methodology of instruction, assessments being carried out and the way success is attributed (ie., if there are any objective and subjective touchstone for being successful in MOOCs. On the other hand, there is a little different view about openness by Ebben and Murphy (2014) which revolves around factors like open licenses for course material, free access to material and the “locus and practice of knowledge acquisition and production”. These researchers show that last of these is a hallmark of cMOOCs whereas the initial ones are the same to both cMOOCs and xMOOCs. The review of literature even suggests that some common elements can be found in both cMOOCs and xMOOCs share. For ex: in both cMOOCs and xMOOCs, the instructors are required to provide the framework explaining the actual structure of the course. The point in which they differ is that with respect to content to fill the structure is usually given by the instructor in case of xMOOCs but in case of cMOOCs, it is done by students. (Hew & Cheung, 2014).

The literature published between 2008-2012 was not very clear about defining the kind of MOOCs (Liyanagunawardena 2013) suggests that the distinction between cMOOCs and xMOOCs were not clear. For the objective of this paper, we shall look at MOOCs as an emerging system in the field of online learning platforms that features open admission, consists of a plethora of courses across various networks that are shared online (cMOOCs) to create systematic and structured learning thoroughfare centralized on platforms that are digital (xMOOCs).

A major portion of the review by Jacoby (2014) is relevant in this context as she focuses on the disruptive potential of MOOCs. For ex: she brings to light some attributes of MOOCs like size, automation in grading and openness (special reference to cMOOCs) as determinants that may affect access to teaching and learning. Kennedy (2014) highlights the potential to Grammatical shifts in disclosure around MOOCs (e.g. participants being referred to as students) is seen by Ebben and Murphy (2014) and state that there can be lessening of authority and importance of the leader( can be instructor or facilitator rather than a professor). At the institutional level, Jacoby explains the impact that MOOCs may exert on business models of universities. The potential for fresh aspirants to the market of higher education by providing a product which can be a perfect substitute for the actual model of education delivery and also states that association of conventional institutions in creating and propagating MOOCs may undermine the substitution. Initial research on MOOCs was in the form of institutional reports and they were intermittently reported learner enrolments and demographics.

**Proposed Theoretical construct**

Source: Authors Model

**3.1 Scope of the study**

This study intends to provide an insight into the factors influencing the effectiveness of MOOC and the various factorial dimensions which leads to it. This paper further puts light into how can MOOC be made popular and acceptable.

**3.2 Objective of the study**

- To understand the different factors affecting the MOOC courses and the expectations of MOOC users.
- To understand Influence between various dimensions (Openness, Communication, Use of Multimedia, Interactive Nature, Duration, and Design/Structure) for effectiveness MOOC courses.

**3.3 Research methodology**

The study consists of exploratory approach and depends upon primary and secondary information. Primary data includes structured interviews, discussion and direct observations. .A

questionnaire was conducted resulting with 228 respondents. likert scale 5-point is used in the set of response for the closed ended questions. In each questions, the respondents had to assess in the 5 point likert scale (strongly disagree -strongly agree). The samples had chosen there the customers of different demographics, pleasure factors, economic factors and attitudes. Random sampling technique was used for collection of data.

Table 4.1 Indicating Sample Adequacy Test

|                                                  |                    |         |
|--------------------------------------------------|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | .836    |
|                                                  | Approx. Chi-Square | 985.570 |
| Bartlett's Test of Sphericity                    | Df                 | 153     |
|                                                  | Sig.               | .000    |

Here, KMO = 0.836 which indicates that the sample is adequate for further analysis.

Table 4.2 Indicating Reliability of Data

|                  |            |
|------------------|------------|
| Cronbach's Alpha | N of Items |
| .783             | 18         |

Cronbach's alpha from the table 4.2 is 0.783 and No of Items 18 which suggest a high level of internal consistency.

Table 4.3 Demographic Profile of the Respondent

|                  | Frequency | Valid Percent |
|------------------|-----------|---------------|
| <b>Gender</b>    |           |               |
| Male             | 76        | 33.3          |
| Female           | 152       | 66.7          |
| <b>Age</b>       |           |               |
| 18-22            | 77        | 33.8          |
| 23-27            | 130       | 57.0          |
| 28-32            | 8         | 3.5           |
| 33 and above     | 13        | 5.7           |
| <b>Education</b> |           |               |
| PUC              | 5         | 2.2           |
| Under Graduation | 156       | 68.4          |
| Post-Graduation  | 63        | 27.6          |
| PhD              | 4         | 1.8           |

### Hypotheses from chi Square tests

Chi Square test was conducted to study the significant association of dimensions of MOOC on its expectations.

H0: There is no significant influence of various dimensions (Openness, Communication, Use of Multimedia, Interactive Nature, Duration, and Design/Structure) on effectiveness MOOC courses.

H1: There is significant influence of various dimensions (Openness, Communication, Use of Multimedia, Interactive Nature, Duration, and Design/Structure) on expectations of MOOC courses.

The results of the study as depicted in table 4 stated that respondents consider the duration of course as insignificant factor when they evaluate expectations that they hold from MOOCs.

Table 4.4: Chi Square Test Depicting Overall Hypothesis results

|                                    | Value               | Df | Asymp.Sig (2 – Sided) | Hypothesis     |
|------------------------------------|---------------------|----|-----------------------|----------------|
| 1                                  |                     |    |                       |                |
| Expectation V/s Communication      | 26.343 <sup>a</sup> | 12 | .010                  | H0 is Rejected |
|                                    | 20.865              | 12 | .052                  |                |
|                                    | 1.175               | 1  | .278                  |                |
|                                    | 228                 |    |                       |                |
| 2                                  |                     |    |                       |                |
| Expectation V/s Interactive Nature | 18.127 <sup>a</sup> | 8  | .020                  | H0 is Rejected |
|                                    | 17.346              | 8  | .027                  |                |
|                                    | .246                | 1  | .620                  |                |
|                                    | 228                 |    |                       |                |
| 3                                  |                     |    |                       |                |
| Expectation V/s Trainer            | 17.087 <sup>a</sup> | 4  | .002                  | H0 is Rejected |
|                                    | 17.058              | 4  | .002                  |                |
|                                    | 8.799               | 1  | .003                  |                |
|                                    | 228                 |    |                       |                |
| 4                                  |                     |    |                       |                |
| Expectation V/s Duration           | 19.318 <sup>a</sup> | 12 | .081                  | H0 is Accepted |
|                                    | 19.912              | 12 | .069                  |                |
|                                    | 2.502               | 1  | .114                  |                |
|                                    | 228                 |    |                       |                |
| 5                                  |                     |    |                       |                |
| Expectation V/s Openness           | 46.132 <sup>a</sup> | 16 | .000                  | H0 is Rejected |
|                                    | 44.244              | 16 | .000                  |                |
|                                    | 9.779               | 1  | .002                  |                |
|                                    | 228                 |    |                       |                |
| 6                                  |                     |    |                       |                |
| Expectation V/s Reach              | 86.470 <sup>a</sup> | 16 | .000                  | H0 is Rejected |
|                                    | 58.739              | 16 | .000                  |                |
|                                    | 27.809              | 1  | .000                  |                |

|                                      |                      |    |      |                |
|--------------------------------------|----------------------|----|------|----------------|
|                                      | 228                  |    |      |                |
| 7                                    |                      |    |      |                |
| Expectation V/s<br>Multimedia tools  | 46.055 <sup>a</sup>  | 16 | .000 | H0 is Rejected |
|                                      | 37.449               | 16 | .002 |                |
|                                      | 15.185               | 1  | .000 |                |
|                                      | 228                  |    |      |                |
| 8                                    |                      |    |      |                |
| Expectation<br>Vs<br>Instructiveness | 103.307 <sup>a</sup> | 16 | .000 | H0 is Rejected |
|                                      | 58.660               | 16 | .000 |                |
|                                      | 36.609               | 1  | .000 |                |
|                                      | 228                  |    |      |                |

### Regression Analysis

In order to study the relationship between the dependent and independent variables that results in effectiveness of a MOOC regression analysis was carried out.

### Hypotheses from Regression analysis tests

H0: MOOC courses various dimensions have no Influence on effectiveness of MOOC

H1: MOOC courses various dimensions have Influence on effectiveness of MOOC

Table 4.5 Representing the various Dimensions- effectiveness of MOOC courses

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .543 <sup>a</sup> | .294     | .245              | .668                       |

a Predictors: (Constant), Course delivery is easy to understand , Are you particular about the Trainer for MOOC, Course Relevance, Duration, discussion forums, Designed for working professionals, time to time, Better understanding, larger audience, All participants, Professional practice, Predefined courses Standardizations, Two way communications is encouraged, Interactive nature learning.

Table 4.6: ANOVAa representing the various Dimensions- effectiveness of MOOC courses

| Model      | Sum of Squares | df  | Mean Square | F     | Sig.              |
|------------|----------------|-----|-------------|-------|-------------------|
| Regression | 39.528         | 15  | 2.635       | 5.898 | .000 <sup>b</sup> |
| Residual   | 94.717         | 212 | .447        |       |                   |
| Total      | 134.246        | 227 |             |       |                   |

a. Dependent Variable: Effectiveness of MOOC

b. Predictors: (Constant), Course delivery is easy to understand , Are you particular about the provider for MOOC, Course Relevance, Duration, discussion forums, Designed for working professionals, time to time, Better understanding, larger audience, All participants, Professional

practice, Predefined courses Standardizations, Two way communications is encouraged, Interactive nature learning.

Table 4.7: Indicating Regression Coefficients of various Dimensions- effectiveness of MOOC courses.

| Model                                                         | Unstandardized Coefficients |             | Standardized Coefficients | t             | Sig.        |
|---------------------------------------------------------------|-----------------------------|-------------|---------------------------|---------------|-------------|
|                                                               | B                           | Std. Error  | Beta                      |               |             |
| (Constant)                                                    | 1.609                       | .428        |                           | 3.756         | .000        |
| Course Relevance                                              | .037                        | .047        | .047                      | .799          | .425        |
| <b>Course trainer for MOOC</b>                                | <b>-.201</b>                | <b>.100</b> | <b>-.122</b>              | <b>-1.999</b> | <b>.047</b> |
| Duration of MOOC                                              | -.019                       | .045        | -.025                     | -.420         | .675        |
| MOOC for all participants                                     | .109                        | .075        | .102                      | 1.468         | .144        |
| <b>larger audience Reach</b>                                  | <b>.202</b>                 | <b>.063</b> | <b>.226</b>               | <b>3.234</b>  | <b>.001</b> |
| MOOC uses extensive multimedia platform                       | .063                        | .068        | .063                      | .928          | .354        |
| <b>Interactive nature makes MOOC courses more interesting</b> | <b>.186</b>                 | <b>.067</b> | <b>.211</b>               | <b>2.792</b>  | <b>.006</b> |
| <b>Freedom to express views in the discussion forums</b>      | <b>-.173</b>                | <b>.068</b> | <b>-.177</b>              | <b>-2.544</b> | <b>.012</b> |
| Courses related professional practice is encouraged           | .079                        | .070        | .083                      | 1.136         | .257        |
| Strategically designed for working professionals              | .002                        | .064        | .002                      | .024          | .981        |
| <b>Two way communications is encouraged</b>                   | <b>.158</b>                 | <b>.072</b> | <b>.166</b>               | <b>2.201</b>  | <b>.029</b> |
| Structured courses lead to better understanding               | -.019                       | .076        | -.019                     | -.250         | .802        |
| Predefined courses structure helps in standardizations        | .089                        | .071        | .093                      | 1.249         | .213        |
| The courses are required from time to time                    | -.058                       | .062        | -.064                     | -.930         | .353        |
| Course delivery is easy to understand                         | -.023                       | .068        | -.023                     | -.331         | .741        |
| a. Dependent Variable: Effectiveness of MOOC                  |                             |             |                           |               |             |

From Anova table we examine null hypothesis, i.e. there is influence of various Dimensions- effectiveness of MOOC courses i.e. Course delivery is easy to understand, Are you particular about the trainer for MOOC, Course Relevance, Duration, discussion forums, Designed for working professionals, time to time, Better understanding, larger audience, All participants, Professional practice, Predefined courses Standardizations, Two way communications is encouraged, Interactive nature learning. Since The P-value lesser than the significance 5% we accept the alternate hypothesis and say that there exists a significant influence of the various Domains over effectiveness of MOOC courses.

The adjusted R<sup>2</sup> value is 0.245. This means analysis can explain 24.5% of the data. The P-value 0.000 is lesser than significance value and thus we decline the null hypothesis and accept alternate hypothesis the factors like Course provider for MOOC, Interactive nature makes MOOC courses more interesting, Participants /audience can communicate in the discussion forums, Two way communications is encouraged, with the effectiveness of MOOC courses

## **5. Summary of findings and Suggestions**

The study aimed at understanding the expectations of users who undertake MOOC courses for various reasons and how effective the courses are perceived by them. The majority of the populations were young graduates pursuing higher degrees of education and the major aim was to enhance the specific skill sets by adding MOOC courses in their resume (Subhi, Y, 2014). They also undertook MOOCs for having firsthand information about a new topic. Majority of the respondents (46.5%) took this course as general interest, 34.2% of the respondents to the course as part of the job requirement, 14.5% of the respondents took this course as part of their elective education and the rest 4.8% attempted as part of the university course (Khalil, H., & Ebner, M, 2013). The study revealed that 54.6% of the respondents prefer certified MOOC courses, 36.6% prefer specialized courses and 8.8% prefer audited courses. Of the total respondents who were surveyed, 67.8% of the respondents are particular about the trainer of the MOOC and the rest is not particular, further, 40.5% of the respondents prefer MOOC courses of the duration 6-7 weeks, 31.3% prefer course of 7-8 weeks, 15.4% course of 9-10 weeks and the rest 12.8% prefer at duration of 11-12 weeks. They also stated that longer duration of the courses fail to generate the same kind of enthusiasm as they possess at the beginning of the course. Majority of the respondents agreed to the statement that the course expectation was met. 27.6% were of a neutral opinion, 13.6% strongly agreed to this while only the very few disagree to this statement. 59.6% Respondents agreed that MOOC courses are open to all participants. 18% were of a neutral opinion, 19.3% strongly agreed and only a very few disagreed. To the statement that the reach of MOOC course is to a larger audience 51.3% agreed to it, 22.8% were of a neutral opinion, 18.4% agreed to the statement and very few disagreed. 54.4% agreed that MOOC uses extensive multimedia platform, 18.4% agreed to it, 22.4% were neutral and only very few disagreed. Hence interactive platforms should be extensively used while preparing such courses.

The statement 'Interactive nature makes MOOC more interesting', was agreed by 54.8%, 17.1% were neutral, 21.1% strongly agreed and a few were disagreeing to it. 52.2% agreed that the participants can communicate in the discussion forums, 25.9% were of neutral opinion, 18% strongly agreed, and the rest very few disagreed. 54.4% agreed that the course related professional practice is increased, 21.9% were of neutral opinion, 18% strongly agreed, and the rest very few disagreed. 54.4% agreed that the key debates and discussions increase the participant involvement, 21.9% were of neutral opinion, 17.5% strongly agreed, and the rest very few disagreed. 53.1% agreed that the course is strategically designed for working professionals, 22.8% were of neutral opinion, 17.5% strongly agreed, and the rest very few disagreed. 54.4% agreed that the course encourages two way communication, 23.2% were of neutral opinion, 17.1% strongly agreed, and the rest very few disagreed. 57% agreed that the course is structured for better understanding, 18.4% were of neutral opinion, 19.7% strongly agreed, and the rest very few disagreed. 50.4% agreed that the predefined structure helps in standardization, 27.6% were of neutral opinion, 15.4% strongly agreed, and the rest very few disagreed. 50.4% agreed that the course is updated from time to time, 25% were of neutral opinion, 17.1% strongly agreed, and

the rest very few disagreed. Majority of the respondents (58.8%) agreed that the course delivery is easy to understand, 16.7% strongly agreed, 20.8% were neutral and very few disagreed.

Reliability test in study is 0.783, which suggest a high level of internal consistency. The chi square analysis revealed the insignificance of duration of the course while considering expectations out of the course. The regression analysis provided insights to effectiveness of the MOOC. Factors like two way communication, freedom to express in discussion forums, larger audience reach, trainer and interactive platform are importance for assessing the effectiveness of the MOOCs

From the research it is seen that the majority age group is 23-27, so MOOC courses can be extended to a much younger audience to extend its reach. The providers can utilise the opportunity of PG students taking up MOOC courses by providing MOOC courses in B Schools and other PG institutes. MOOC can be made extensive by introducing it as part of University Curriculum. Providers' focus can be on certified courses to improve effectiveness (Selwyn, N, 2015, Veletsianos, G, 2015). The effectiveness of MOOC is relatively proportional to its reach, multimedia platforms, openness, interactive nature, communication, strategic design, course structure and ease of understanding (Guo, P. J, 2014).

## **6. Conclusion**

In this research, the perceptions of the participants of MOOC course on various factors which influences them to take up the course are studied and how does it result in meeting of their expectations. It is found that the effectiveness is directly related to its reach, multimedia platforms, openness, interactive nature, communication, strategic design, course structure and ease of understanding. These dimensions can be utilized to increase the effectiveness of MOOC courses and extend its reach to a larger audience as the Higher education is changing rapidly worldwide, MOOCs have the capable to disrupting many of the traditional sector's and assumptions and it is paramount to keep students in center of innovations (Zawacki-Richter,2009).

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