



## MOOCS - EXPLORE 21<sup>ST</sup> CENTURY SKILLS: OPPORTUNITIES AND CHALLENGES

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### ABSTRACT

*India is a developing nation which needs a large number of productive engineers to compete in this globalized world. The establishment of huge number of engineering colleges unable to produce quality engineers and also to provide quality outcome based education for which ICT (Information and Communication Technology) is essential. The technology has revolutionized the present education system which is the primary factor of a nation to define its growth and development. The present education system has outdated syllabi which do not match to the needs of the learners in order to meet the industry. In a developing country like India, most of the students are from rural-areas and they cannot afford quality education. Undoubtedly, Massive Open Online Course (MOOCs) has emerged as a recent path-breaking educational paradigm and can definitely be a game-changer. As the name implies, it is massive, open and online. It has started in 2008 and reached every corner of the globe which had helped to learn new things at its doorstep. The researcher aims to explain its history, development and highlight the importance of MOOCs, The article focuses on strategies of MOOCs which is to be implemented in rural areas. It also focuses on challenges and issues faced in the teaching-learning process for outcome based education.*

**Keywords:** ICT, MOOCs, Game-Changer, Globalization

### INTRODUCTION

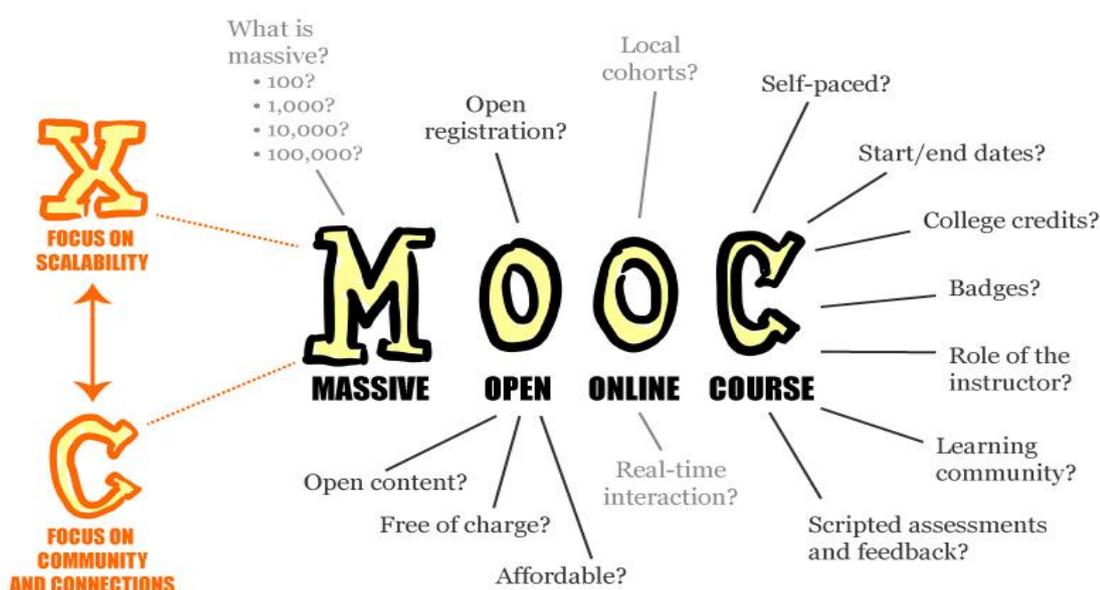
MOOC, A massive open and online course is an online course which had come into form in digital age was coined by Stephen Downes and George Siemens entitled “*connectivism and Connectivity Knowledge*” in 2008 which were first introduced in 2006 and emerged as a

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popular mode of learning in 2012 (The year of the MOOC). MOOC (Massive Open Online Course) is added to the Oxford English Dictionary. It provides hundreds of courses around the globe by third party online platforms which are developed by academicians. The aim of MOOCs is to provide and develop the opportunity for exchange of ideas, thoughts between a wide variety of participants and appeared by online tools for richer learning environment than conventional method. In its initial stage, 25 students attended the course, later it was promoted by 2300 students had participated all over the world.



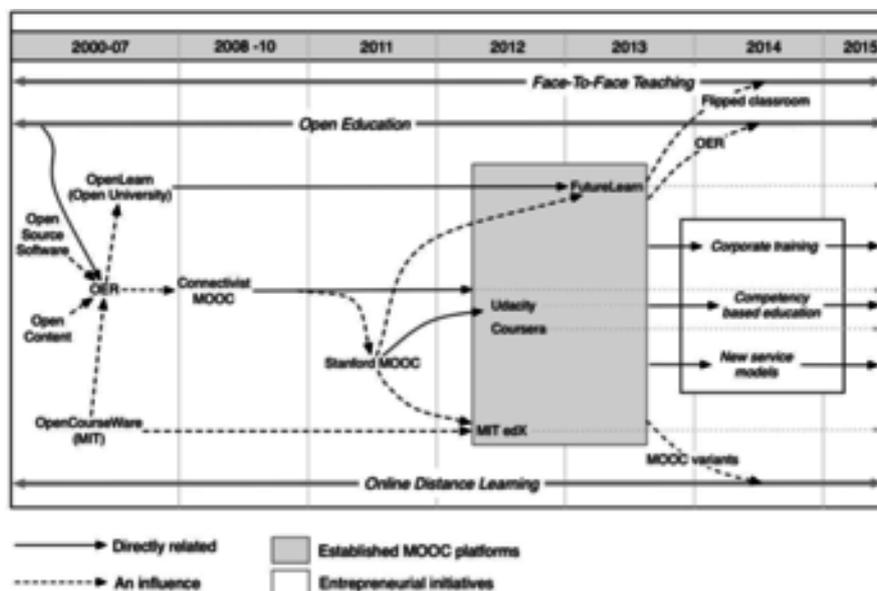
Before the Digital era, the learners may use ICT tools like Television and Radio and some of the e-learning tools like projector, system and Internet. In the millennium of 2000, many drastic changes had occurred in the mode of teaching and learning as online, e-learning and distance learning. As a part of this, ICT had established the concept of MOOCs (MOOCs and Open Education Timeline). It aims at distance learning with all resources in order to support community interactions among the fraternity. It became popular in 2012. MOOCs emphasizes on interactions and connectivity which are called *cMOOCs* (George Siemens). Later professors from Stanford University in 2011 offered a few educational videos on online and supported by free web resources by Peter Norvig and Sebastien Thrun which are called *xMOOCs* (The New York Times). From that time, it exploded the entire globe day by day increasingly for free access for the learners. Afterwards, they had established various online web resources such as Coursera, Udacity, MITx, Futurelearn etc. (The Year of the MOOC).

Udacity, a non-profit organization was founded by Thrun in February, 2012 and develop MOOCs for free learning (Nature Magazine). In April, 2012 Andrew Ng and Daphne Koller started Coursera with the Stanford Professors in preparing MOOCs. MIT developed the MITx platform for offering MOOCs which was renamed as edX (MIT). Early MOOCs are open-licenses of content, structure and learning goals but later it has used closed licenses for their course materials while maintain free access for students. More than 4 million students had enrolled in different massive online courses in Coursera and over a million of students in Udacity and edX. However, there is a high dropout rate of over 90% in most MOOCs. Besides this, other

E-learning sources are accessed such as Khan Academy, Udemy, Alison and Peer-to-Peer University which are similar to MOOCs to highlight individual self-paced lessons.

### cMOOCS and xMOOCs :

cMOOCs works on the principles of Connectivist Pedagogy for better collaborative dialogue and knowledge building (George Siemens). XMOOCs works on the conventional course structure in a specific syllabi of recorded lectures where the individual is limited for asking and advice on the specific topic /lecture as the instructor is subject expert (Prpic John).



### MOOCS and Open Education Timeline

#### MOOC PROVIDERS:

The New York Times, declared 2012 as “the year of the MOOC” as many of the courses emerged like Coursera, edX, Udacity (Moocs: Hype or Hope). In early 2013, Josh Coates, Instructure CEO suggested that MOOCs are in the midst of a hype cycle with expectations

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undergoing a wild swing (chronicle.com). There were profitable and non profitable organizations which developed their courses. Khan Academy and edX are non-profitable where as Udacity and Coursera are profitable where they have launched master's degree at \$7000 (Tech Georgia). In mid 2013, edX started MOOC with a partnership with Google infrastructure and edX offered 94 courses from 29 institutions around the globe, and Coursera offered 325 courses with 30% in Sciences, 28% in arts and humanities, 23% in information Technology, 13% in business and 6% in mathematics, Udacity offered 26 courses. Gradually in 2016, edX offers 820 courses, Coursera offers 1580 courses and Udacity offers more than 120 courses ( Waldrop, M. Mitche). According to Future Learn, the British Council's Understanding IELTS: Techniques for English Language Tests, has an enrollment of over 440,000 students.(Future Learn)

Here is a list of notable providers:

Provider	Founded	Head Quarters	Content/License
Stanford Online	2006	USA	Free for registered users personal / non commercial usage
Coursera	2012	USA	Free for registered users, different course licenses
Khan Academy	2006	USA	Free – No registration needed, All rights reserved
Udacity	2012	USA	
Eliademy (Based on the open source – Moodle virtual learning environment	2012	Finland	
Future Learn	2012	UK	All rights reserved
edX	2012	USA	All rights reserved
Alison	2007	Ireland	
Lynda.com	1995	USA	
NPTEL	2015	India	Free for registered users, payment required

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			only for certificates.
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**CRAZY MOOCS:**

As cMOOCs focuses on distributed learning materials such as digital storytelling, xMOOCs focused on Introduction into AI , number of innovative courses had emerged (The New York Times). The above mentioned courses are offered by top US universities and colleges. Gradually, many of the universities had affiliated with MOOCs including Google’s Power Search (Steve Kolowich). In most of the universities, the range of the courses had raised to over 10.8 million participants in their MOOCs courses. It offers courses in arts, humanities, sciences and psychology. Moreover, it worked well in Arts and Humanities rather than Math and Science. Coming to India, only 8.8% of students had enrolled in Coursera and in USA it is 27.7% (Geoffrey Fowler).

A study from Stanford University’s Learning Analytics, there were four types of students (MacKay, R.F.) They are as follows:

**Auditors:** One who watch the video throughout the course, but take few quizzes for exams.

**Completers :** One who viewed lectures and took part in most assessments

**Disengaged Learners:** One who quickly dropped the course

**Sampling Learners:** One who might only occasionally watch lectures.

The following table shows you the graphical representation of the learners at different levels as per Stanford University Analytics (René F. Kizilcec; Chris Piech).

Course	Auditing	Completing	Disengaging	Sampling
High school	6%	27%	29%	39%
Undergraduate	6%	8%	12%	74%
Graduate	9%	5%	6%	80%

It is observed that the half of the students who are taking courses from the US are not speaking English as their mother tongue (Bombardieri, Marcella)

**DIFFICULTIES ENCOUNTERED BY MENTORS:**



The Chronicle of Higher Education in 2013 has surveyed 103 professors who teach MOOCs. It is noticed that if the mentor spent 100 hours on his MOOC for his/her preparation for recording online lecture videos and images, later he/she spends 8-10 hours per week on the course and participate in discussion forums.

MOOCs experts require extra skills like recording the video, instructional manual and need to be IT specialist and also uploading of the data in the websites (Steven Kolowich). As MOOCs use cloud computing, many of the educational software's like Elicitus, Lectora and e-learning standards like SCORM and AICC have created which are easy to use. (Phatak, D. B)

### WHY MOOCS:

In this Digital Age, technology is playing a pivotal role in Higher Education in the form of Online and Distance Learning. If we question, why MOOCs means, the following points reflect as follows:

- It is regarded as an important tool to have widened access to Higher Education across the globe. Every learner is able to access complete courses on online offered by the MOOCs providers in the reputed and well developed institutions and mentors.
- Provides an affordable alternative to formal education for more number of participants and can be accessed anywhere and anytime as they possess Internet connection and open to everyone without any educational qualifications. It has no registration and open for all as they need to passion of learning.
- As MOOCs is a form of open, free education through online believes to provide quality higher education across the globe and tool to achieve sustainable Development Goals.
- Can acquire specialization in various fields and update their knowledge to find new potential vocations and interests.
- Freedom of learning is provided by MOOCs where the users are allowed to study anything from renaissance poetry to modern linguistics at their own place and time.
- Can build network by interacting in real time with real people in forums, real-time discussions, chat rooms, video lectures which helps to make the course interactive and user friendly.

### CHALLENGES AND ISSUES:

The MOOC course has the possibility of undergoing the following difficulties as follows:

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1. Relying on user-generated content can make a confused learning environment.
2. Knowledge on Digital Literacy is important to use the online materials.
3. Time Management is also another issue where the students are enthusiastic to consign to a free online course.
4. The learners must set their own goals and achieve it in a proper way.
5. As the content of the course is released, it is reshaped and reinterpreted by the massive student body and it is difficult for the instructors to control.
6. Most of the content in foreign language i.e English, so it has become great barrier for learning and translation.
7. MOOCs are not reliable means of supplying credentials.
8. MOOCs have no proper structure and sequenced academic program where chunks of video lectures cannot make success.
9. The teaching model of exams in the form of multiple choice questions and peer-grading may not make the learner efficient.
10. MOOCs challenge the roles of the mentor, hierarchy, change and immensity.
11. Lack of motivation and self-regulated learning is possible in MOOCs.
12. The course content may be too difficult or too basic and also duration of the course is too less or high.
13. All the individuals cannot enjoy the course equally in course of completion rate.
14. Assigning mentors to students is another interaction-enhancing technique.
15. Monitoring and Evaluation is most difficult activity.

## **CONCLUSION:**

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In pursuit of knowledge, MOOCs is a high-quality means of industrializing Higher Education of another sign of Western Colonization, at the same time as others see it as a threat to traditional Higher learning. MOOCs distinctive – degree, data communities, arrangement and credentialing flexibility help the online courses to solve certain problems in higher education which takes the advantage of the format, rather than to fit in the traditional pedagogy.

The Digital Era is moving fastly and quickly with the technology where we need to address the students for creating the institutional momentum to create the institutional partnerships to solve these problems. If the administrators and policy makers implement it in a curriculum, the students will have more advantage and use it in a proper way in the process of teaching and learning.

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