

# MOOCs in India: Yet to Shine

Rupak Chakravarty\*, Jaspreet Kaur\*\*

## Abstract

Education has undergone an unprecedented change since ancient times. As a latest development Massive Open Online Courses (MOOCs) are emerging all over the globe. Embracing students from diverse geographical areas, academic backgrounds, and professional pursuits is the essence of open learning. India is in fact second largest user country of MOOCs, following US being at number one. Recognising the same, MOOCs gained momentum in India too. While some are run by private business houses, others are introduced by the Government so as to reach the unreachable target group, achieve desired literacy level, and sharpen the skills of youth in order to deal with unemployment and promote various other projects of India viz. Make in India etc. India has still a long way to go; they are likely to be operational like a storm only by year 2020.

**Keywords:** MOOC, Massive Open Online Course, Online Learning, Online education, C-MOOC, X-MOOC, ApnaCourse, National Programme on Technology Enhanced Learning (NPTEL), Study Webs of Active-Learning For Young Aspiring Minds (SWAYAM), e-PG Pathshala

## Introduction

Education in India has witnessed many phases. Ancient India had Gurukul system of education where a disciple had to undergo training under a mentor of high intellect. The curriculum was limited to study of scriptures and *shlokas*. The tenure of the education stretched till Guru found he had nothing more to offer.

The modern school system was brought to India, including the English language, originally by Lord Thomas Babington Macaulay in the 1830s. The curriculum designed saw inclusion of modern subjects such as Science and Mathematics, and subjects like Metaphysics and Philosophy.

As of today India follows following stages of education:

- Pre-Primary
- Primary
- Middle
- Secondary
- Senior Secondary
- Undergraduate and
- Post-graduate.

As per latest census report, nearly 70 percent of the country's population lives in rural areas. Of the 121 crore Indians, 83.3 crore live in rural areas while 37.7 crore stay in urban areas, said the Census of India's 2011 Provisional Population Totals of Rural-Urban Distribution in the country, released by Union Home Secretary. Over one-third of Indian population living in rural areas is illiterate according to the Socio Economic and Caste Census (SECC) 2011. The percentage of graduate and higher education is only 3.45 percent across the country. The total literacy rate in India is 72.99 %. As per Population Census of India 2011, the total Literacy rate of India has been recorded at 74.04 % with only an increase of 9.2 % to what was prevailing in country in 2001 (65.38%). The still so alarming percentage is because access to education for those seeking it is always not that comfortable. Even today, a number of news appear where students have to cross rivers to reach their schools or other educational institutions or many parents have to shift their household for sake of education of their children. Affordability is one more such factor. Distance learning, open universities and schools, MOOCs etc come to rescue of such and more people.

## Education for all

Distance education and open universities as we know gave new dimension to achieving academic hunger to young

\* Faculty, Department of Library & Information Science, Panjab University, Chandigarh, India.  
Email: rupak@pu.ac.in

\*\* Library Assistant, Panjab University, Chandigarh, India. Email: kaurjaspreet4877@gmail.com

people. Those who were bound due to geographical areas, finances, discrimination by society got an advantage to touch new heights. The mode of teaching was primarily lecture notes sent through post. With development and advancement in communication and technology, MOOCs have taken over the revolution. With enactment of Right to Children for Free and Compulsory Education Act (RTE) from age of 6 to 14 as per Article 21-A of The Indian Constitution which came into effect on 1<sup>st</sup> April 2010, the significance of open/online education has increased manifold.

## Introduction to MOOCs

The term MOOC (Massive Open Online Course) was derived in 2008 by Dave Cornier of the University of Prince Edward Island and Bryan Alexander of the National Institute for Technology in Liberal Education. MOOCs are of a very recent origin in distance education, started somewhere around mid of 2011.

MOOCs are the latest addition to field of distance learning. MOOCs are student friendly, for there are not long procedures or formalities or pre requisites for enrollment in a course. Not hefty tuition fees are required. Some of them are available free of cost while others only require a minimum amount. MOOCs help you gain education from top universities, best of faculty even when you have not been able to step there. MOOCs suffice the thirst of minute area expertise. It turns helpful for those who want to excel while being in jobs by gaining expertise in very minute field of their interest. MOOCs help such people gain visibility in their organisation by getting expertise, rise to promotions, handle competition and ease their survival besides self-contentment and even going indispensable to particular organisations. MOOCs are known to inculcate competency skills, innovation, learning thrust in its users. MOOCs are successful as the student needs just an Internet connection combined with desire and the learning can be carried out in form of recorded lectures. Technically MOOCs can be elaborated as shown in Table 1.

## Definition

- A massive open online course (MOOC) is a free Web-based distance learning program that is designed for the participation of large numbers of geographically dispersed students.
- A MOOC is an online course with the option of free and open registration, publicity–shared curriculum, and open-ended outcomes. MOOCs integrate social networking, accessible online resources, and are facilitated by leading practitioners in the field of study. Most significantly, MOOCs build on the engagement of learners who self-organise their participation according to learning goals, prior knowledge and skills, and common interests (the MOOC model for digital practice).

## Aim of MOOCs

MOOCs have come into existence or more so gained popularity as they are innovative in their courses, attract larger audience, don't follow brick and mortar education environment, whole wide world is a laboratory to them, also award certificates against very nominal fee, and provide access to education at no cost.

## Role of Instructor

Instructor bears the responsibility of designing content, assessments, activities and deciding about learning path to be followed.

## Role of Learner

Learner has access to knowledge for the course work opted through content which is generally videos mailed. He participates actively in group for discussions, attempts the assessment area in form of quizzes and also undertakes research work or goes for more literature review to attempt projects.

**Table 1:** MOOCs

<b>M:</b> Massive in number (There is no limit to student intake; there can be tens of them or there can be tens of thousands)	<b>O</b> Open for all, placed anywhere with minimum or no mandatory qualifications, free of cost or at minimum possible cost
<b>O:</b> Online (completely through internet). Class attendance is not at all required in this.	<b>C:</b> Courses i.e. based on well formulated syllabus, structured, time frame, affordable

## Flow of knowledge

The knowledge imparted by instructor directly flows to learner in an altogether different environment from that of formal classroom teaching, though content or knowledge is not compromised upon.

## Methodology of Learning

Learners or students of a particular MOOC are expected to view videos posted by MOOC platform, developed by instructor, attempt quiz and apply the learned contents to a project for which ideas or tentative list may be provided by instructor.

## Assessment

Assessment is based on attempted quizzes or assignments based on videos or content already provided to students.

## Creator of Content

The content is created by the instructor as per the MOOC theme or subject covered.

## Interactions

Learners view content and also participate in online discussions, post their queries to which other MOOC participants can reply and share their opinions.

## Timeframe

While few MOOCs can be accessed 24/7 while others have set time frame. The deadlines, launch of new chapters, addition of videos is informed to the participant on their e-mail ids.

## Classification of MOOCs

MOOCs have been divided into following sub types:

### C-MOOC

In the very emergence of MOOCs, MOOCs started to appear on strong basis of collaborative philosophy, learning through interaction and connectivism theory. Siemens accentuated that “Instead of knowledge residing

only in the mind of an individual, knowledge resides in distributed manner across a network”. The term C-MOOC refers to a MOOC designed to emphasize connecting learners. C-MOOC stands for Connectivist MOOC. C-MOOCs are built upon the idea and platform originally envisioned by George Siemens. The relationship between work experience, learning, and knowledge, as expressed in the concept of ‘connectivity’ is central to connectivism, motivating the theory’s name.

Connectivism is learning which has evolved out of cultural and social context. C-MOOCs owing to its nature are not funded by any authority or higher educational institutions but are organised by individuals with a passion for specific content area and their desire to contribute to society as a gesture of their own. Organisers commit their time to create a framework for learning where participants from all over the world can connect, share, contribute, collaborate to learn, and expand their network. It is a platform where peer to peer benefit is witnessed in a striking manner. Common set of interest of participants is the backbone of C-MOOCs. C-MOOCs give more authority to participants than designer. Participants mingle amongst themselves. C-MOOCs are more open, flexible, responsive to needs of its participants hence participants decide the objective of the course, contemplate on the paths to achieve objective, contribute actively through blogs, tweets etc. which are shared over mail upon compilation by course organisers on daily basis, picks up a final path upon experimentation, keep record of their experiences, celebrate their success and collectively stand for any failures too. Participants go off the web and put use to learning in real world, in communities. This type of MOOCs is more about connecting learners than teaching about presenting content. The mentor and disciple are on the same level and both the groups learn from each other during the course. This MOOC is more suitable to share best practices, for creative learning and advanced professionals. These features make assessment of C-MOOCs a tough job and may not fall in line with standard assessment techniques.

### X-MOOC

X-MOOCs have their background in the rise of open courseware. C-MOOCs appear to have developed out of the idea of open courseware and open educational resources. X-MOOCs are typical extension of traditional course materials, learning theories, higher education

teaching methods, and are well-financed. They are a modification of campus learning system only where in video lectures (posted on home page) and other resources are used. For assessment short quizzes are conducted. The teacher student relationship is more formal in nature where students don't design the path as in C-MOOC but walk the path designed by the instructor. Here an instructor is a subject expert. X-MOOCs are generally for profit making. The material provided adheres to quality. Courses that face bad material, plagiarism, are immediately closed.

X-MOOCs operate with the partnership of university and MOOC platform, which works with a business mind set i.e. to generate profit. While designing curriculum and developing video by an expert, huge financial expenditure is incurred which is arranged by the private developer of MOOC or a university for such purposes relies on special grants by some organisation like Bill and Melinda Gates foundation or philanthropist, which is rare. Both Coursera and Udacity are set up as for-profit companies and have received millions of dollars in funding from venture capitalists and those companies will try to take benefit of this in near future is not a thing to be guessed. The potential of MOOCs can be ascertained from a typical example of 2011, when Sebastian Thrun started with Udacity first course on Artificial Intelligence expecting few enrollments against crash registrations of about 1,60,000.

MOOCs, like everything in world, come with its advantages and limitations as well. The list goes as follows:

### Advantages of MOOCs

1. MOOCs allow you to pursue your area of interest while doing job, studying or anything.
2. People from varied geographical background can come over and join MOOC without physical dislocation.
3. MOOC offers best of institutes, teachers without you even moving out from your home. Physical presence is not at all required.
4. MOOCs can be carried out during your free time. There is no time schedule regarding listening to or viewing video is allotted.

5. MOOCs do not restrict the number of seats. It is massive in nature.
6. All you need is Internet connection and a PC/ mobile phone /tab and you can complete a course.
7. It is very beneficial for those for whom financial crisis hold them from undertaking education, this can be especially true for countries like India, Pakistan etc. where gender discrimination leads to lesser educated girls.
8. MOOCs are almost entirely free of cost unless and until you need a certificate.
9. MOOCs helps gain people from corporate sector more efficiency and sharpens skills in required set of area.
10. MOOCs help you acknowledge your learning thirst. They cannot restrict a doctor from joining a Music MOOC or a musician undertaking Hospital Administration course.

### Limitations of MOOCs

1. MOOCs, being massive in nature fail to provide face to face or one to one interaction between a learner and an instructor.
2. MOOCs may not end up helping you earn a degree.
3. MOOCs are self-motivated. The more you can push and keeps your desire lamp burning the better it would be.
4. MOOCs can never replace the need of classroom/ traditional teaching.
5. MOOCs are not ideal for courses where labs are needed for experimentation.
6. MOOCs are hardly taken seriously by participants. The number of enrollments is always much higher as compared to number of completions. Drop outs rates are very high when it comes to MOOC.
7. MOOCs can never be that interactive as much as a classroom is.
8. MOOCs leave authentication a matter of choice for participants. Even authentication does not ensure it.

## Major MOOC Platforms in India

### ApnaCourse

ApnaCourse is a leading MOOC provider from Bangalore located in India. Satish Rajagopalan is the Founder Director and CEO of the company. It is a product for profit making by Spearhead EduOnline Pvt. Ltd. It was launched in August 2013 and presently caters to thousands of individuals craving for skill development so as to enhance prospects of career enhancement world over with varied courses across banking and finance, project and operations management, IT and security, sales and marketing, Law, OB and HR management, languages, personal development, statistics and data analytics. The video courses are delivered by top instructors known in their field of expertise with abundance of experience. The videos are set on standardised templates with real time view of the instructor and presentation with white board feature and calculator views. The videos are recorded in state of art studios ensuring high end audio video clarity. To maintain quality of lectures, all the videos prepared for course delivery undergo quality checks to put lecture delivery issues to minimum level. Upon quality check the video lectures are launched for view by participants. Similarly equal stress is put on while hiring faculty which comprises of best trainers, training institutes and corporate. The courses are also blended with numerous quizzes to enhance the learning experience. The trainers are approachable for solving queries through forum called social circle and webinars. ApnaCourse has been awarded amongst the best E-learning companies at Global Learn Tech Congress and Awards 2014 startup of the year 2014 in Online Education by Silicon India, awarded emerging SME of the year 2015 by KSMBOA.

### National Programme on Technology Enhanced Learning (NPTEL)

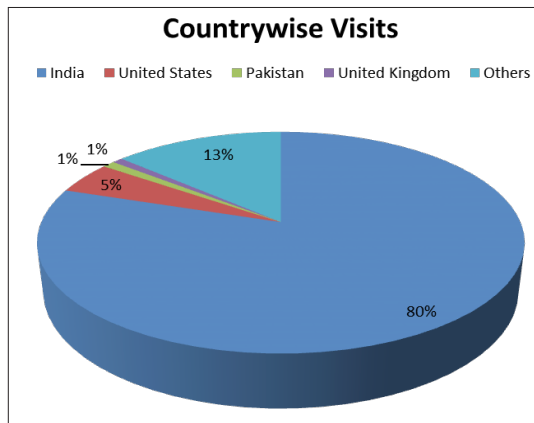
NPTEL stands for National Programme on Technology Enhanced Learning. NPTEL is a project funded by MHRD and was conceived way back in 1999 to introduce multimedia and web technology to support learning of basic science and engineering.

A joint initiative by seven Indian Institutes of Technology namely IIT Bombay, Delhi, Guwhati, Kanpur, Kharagpur, Madras and Roorke, and Indian Institute of Science for creating course contents in Engineering and Science

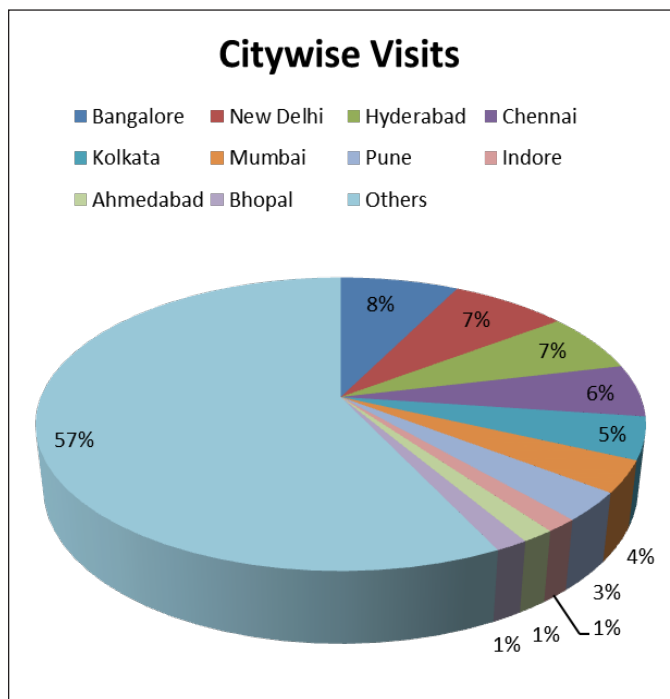
resulted in birth of NPTEL on September 3, 2006. The project evolved at IIT Madras with intent to provide learning material in form of taped classroom lectures, links to state of the art research materials to students at all levels. As per YouTube statistics, NPTEL has emerged as one of the most viewed educational channels amongst top 100 channels, claiming 55<sup>th</sup> rank by contributing 18,672 videos and subscribed by 493,909 (data collected on 18.01.2016). NPTEL was thought of with an objective to provide quality education in field of Engineering in India by developing curriculum based videos and web courses. The electronic learning material supplements classroom teaching. It is mandatory for students of IIT Madras to attend 75% of NPTEL lectures to be eligible to appear for examinations.

The lectures prepared are of different formats. While few instructors prefer to actually depict classroom environment and can be seen teaching on blackboards, others prefer to share the content through slides or delivering lecture facing camera. The lectures prepared in electronic form are of highest quality as faculty members are personally involved in their preparation. The lectures almost replicate class room traditional teaching method involving lecture delivery followed by testing through quizzes and written examination. Both developed and developing countries are hugely investing into multimedia based courses for high potential of interactivity and for different reasons. In developing countries, where online and distance education opens new doors to people for whom either education is beyond approach or expensive to continue; for already developed nations, multimedia education helps to enhance skills while being at home. Such a form of education which has benefited students has equally made teaching a much more creative field. Technology helps in introducing a freshness and innovation to the course material. Other than this being accessible to multiple people at same time distributed by geographical areas is also an achievement in itself.

For a country like India, NPTEL has been of extensive help to the newly opened engineering institutes which are at times running short with experts and facing inadequate faculty support and training. NPTEL aims to provide a set standard and quality education for both the faculty and students.



**Fig. 1:** NPTEL Usage and Acceptability Worldwide



**Fig. 2:** City Wise NPTEL Visits

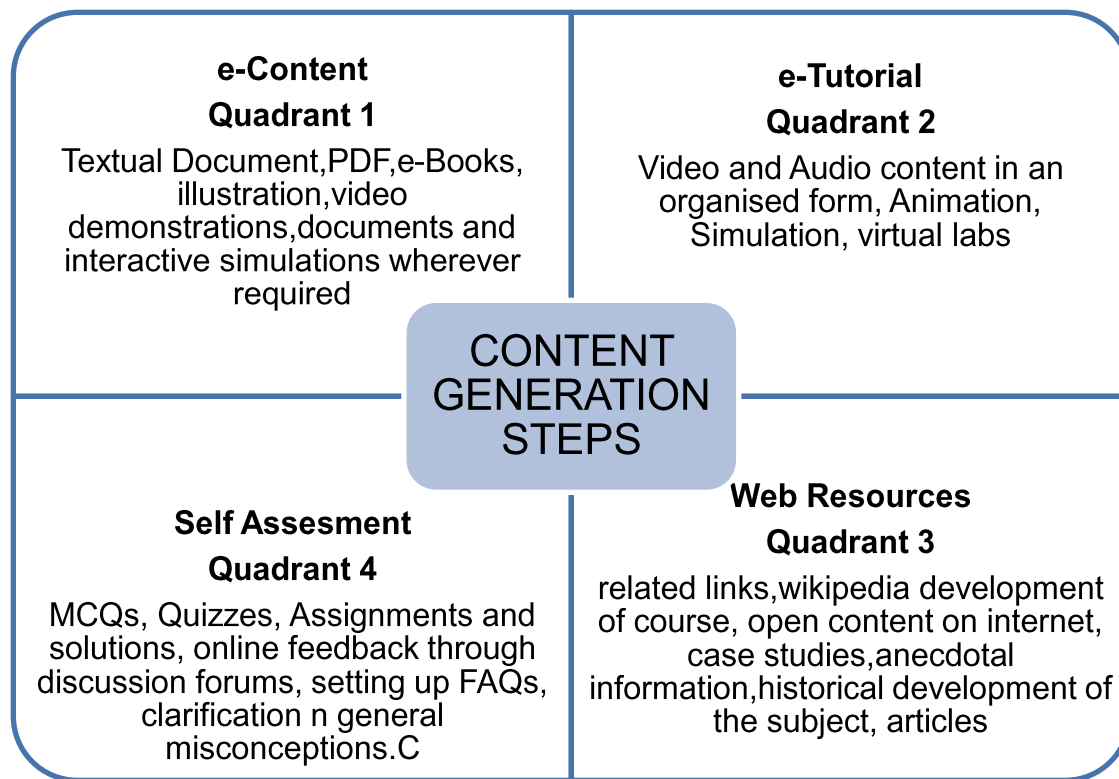
### e-PG Pathshala

UGC launched e-PG Pathshala with an aim to standardise curriculum followed in various universities by providing e-content and enhance overall quality in field of education. The project is part of the centrally sponsored scheme of National Mission on Education through ICT (NMEICT). Its motto being “To Provide Connectivity up To The

Last Mile” is anticipated to gauge the potential of ICT, for all the learners in higher education in teaching and learning process at any time anywhere mode as a centrally sponsored scheme. The underlying aim of NMEICT is to bridge the gap of digital divide that is often seen between urban and rural educators and learners in India. Considering this providing and upgrading of computers and other digital infrastructure to over 32000 colleges and each of the departments of over 550 universities/ deemed universities and institutions (existing at the launch of e-PG Pathshala) of national importance in the country was decided. The project has a purpose to come out with standardised textbook materials for Post graduate classes in 77 subjects across all disciplines of Social Sciences, Arts, Fine Arts & Humanities, Natural & Mathematical Sciences, Linguistics and Languages. To make accessibility of all e-content a non-tedious process, it was declared to be available in open access through a dedicated Learning Management System (LMS) as well as through Sakshat Portal.

Eminent professors from varied universities had been appointed as national coordinators to handle availability of free standard e-textbooks of all subjects after standard curriculum designed. The project was aimed at poor students who can't afford much of education or extra coaching. All the e-content before being put on public portal needs approval by the Academic Content Advisory. The contents are designed and demonstrated in a way to turn out to be interactive in nature with audio-visual, interactive links and online support to the student so as to maintain their interest and further let them explore more on area taught. The contents created and approved are keeping in view learner and teacher friendly, learner centric, employing learner centric pedagogy, objective based learning/teaching, technologically friendly and self-evaluative in nature. The whole methodology of teaching in e-PG Pathshala has been put into 4 quadrants as shown in figure below.

e-PGPathshala differs from MOOCs in ways that it doesn't provide enrollment, one can watch the videos on YouTube. Also neither there is a provision of credit nor of any certificates. e-PG Pathshala helps students add to their subject knowledge, clear doubts, and give more clarity to updated content.



**Fig. 3: The 4 Quadrants: Components and Facets of ePG Pathshala**

## Conclusion

Online education is the new driving force in education. Online learning promotes lifelong learning too. Technology has made it possible for one and all to grab the opportunity and key to education. Inclusive education is really emerging and seeing success with help of technology. People who can afford even go to lands other than India to achieve specialisation. All this is now just available a click away, at a press of a button. With the advent of technology, soaring high economic development worldwide, the world is adopting to ever new ways of learning. To make its youth well equipped at international expectations platform, India started on with MOOCs. Such phenomenal initiatives are seen at corporate levels as well as at the level of Government which we discussed above. Considering how beneficial a MOOC can be, we still cannot claim it as a replacement to traditional system of education. A blend of both can only provide a balanced and complete education to the youth of today. U.S. Department of Education in its findings claimed that “online learning produces stronger student learning outcomes than do classes with solely face to face interaction”. Indians are the 2<sup>nd</sup> most enrolled students

with various platforms though it’s no recognition make us come to fact that India needs more of its own MOOCs so as to make it possible to turn beneficial to student lobby by gaining credits and grasping jobs. An effort in the same direction is being made in the form of Study Webs of Active –Learning for Young Aspiring Minds (SWAYAM), an interactive e learning Indian platform for all the subjects as declared by Ministry of HRD in its initiatives declared under 2015 Annual Report. The content will be available for level of high school to post graduation with approximately 2000 courses on its board at its tentative launch of March 31, 2016. With its launch, expectation to reach students from remote rural areas with an aim to witness unimaginable rise in educational level seems possible. Around three crore students are expected to benefit from SWAYAM. Various other projects of NCERT and other institutions for instance 7000 e-content modules developed by Consortium for Educational Communication (CEC) in 20 Subjects at the UG level would be converted into MOOC’s. For the classes from 9<sup>th</sup> to 12<sup>th</sup>, 800 videos available under UDAAN for subjects on Mathematics, Physics and Chemistry are planned to be made available under SWAYAM after addition of online quiz and assessment too to make it a MOOC. NCERT too agreed

to share its online material developed under NROER (National Repository of Open Educational Resources) after repurposing and erasing of overlapping material by CBSE and NCERT.

Once MOOCs shine, India will be all together a new country at educational level.

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