Transforming Indian Higher Education-Role of MOOCs

Ajithkumar.C
Assistant Professor - School of Education, IGNOU, New Delhi
Email - ajithchalil@ignou.ac.in

Abstract: India, the largest democratic world and third in population in the international scenario is full of energetic and technologically talented young minds that enroll for higher and university education each year. The status and enrollment ratio of students admitted for university education is so alarming and is growing at rapid pace but the third largest populated country has failed to materialize the dreams of large group of young talents. The state and central governments are coming up with innovative tactics to meet the educational demands of the country but still the country has not reached the aim where it was aiming at. In this context and today's technological revolutionary world, one of the scopes is to make use of the technical devices that removes much of the barriers like economy, access and cutting costs of education. Here comes the relevance of MOOCs for education in a developing country like India. MOOCs are Massive Open Online Courses. Each letter of the short form MOOCs are highly meaning full and suits the education system of a country like India. Massive refers to the non-restriction in   the enrollment of learners to various courses, Open implies the openness i.e. any person can join ,Online denotes the platform on which the courses are operated and Course indicate the learners centered nature of the course that are being offered as MOOCs. This paper discusses the features of MOOCs and its relevance to Indian higher education.
Key Words: MOOC, Massive, Open, Online, Course.

Introduction:

University education of a developing country like India is so enormous that it has bye passed the Unites States enrolment in the year 2010 and became the second largest country in enrolment in that particular year. The major question "How can India accommodate, provide quality education and organize the ample space to the young brighter technically rich learner community"? In the year 2007 the then prime minister has reported that almost half of the Indian districts ,the enrolment in higher education is substantially low and 90 percent of the colleges were rated as below average on quality parameters. The same observations have been reported by international surveys. None of the Indian universities could find a place in the top ten lists of the rating of higher education institutions. Why is it so? There are serious issues and concerns in the Indian higher education sector. We have been focusing on four frontier areas to maintain quality education viz: access, equity, quality and relevance. Despite numerous numbers of initiatives a country like India has been a failure in achieving the standards of education.

The present status of Indian higher education has to undergo a fully fledged revamping at all levels of education especially in higher education. What can we do at this juncture? The growing educational needs and aspirations of thousands of talented youth may be resolved to an extent through adoption of technology in place of traditional face to face education. Appropriate endorsement of technology may wipe put the burring issues of Indian education and learner community like poverty, gender discrimination, human rights and liberty, impact of globalization, environmental concerns, skill development and it will support students attend quality education programmes. Definitely at this stage, the whole academic community would agree that   digital technologies have the caliber to transform Indian higher education. Keeping these points in mind policy makers of higher education has been trying to integrate technology rich pedagogy and online courses. Through integration of technology the Indian higher education may achieve the aim and satisfy the needs of young minds. Here comes the role of MOOCS. Introduction of MOOCs may unravel the major shortcomings and pitfalls that exist in the Indian higher education.

Indian Education Current Scenario:

University Grants Commission the apex regulatory body of Indian higher education has come out with a report "Higher Education in India at a Glance" in the year 2012.The report says there are 634 degree awarding higher education institutions of which Tamil Nadu is leading with 59, then Uttarpradesh with 58, Rajasthan 48, and the states like Maharashtra and Karnataka, Gujarat, Madhyapradesh and West Bengal each having institutions 42, 36, 28 and 26 respectively. Most of the institutions are situated on the west, south and northern states. The situation

of north –east is different .North –eastern states put together amount to 40 higher education institutions with Assam having 40,Meghalaya 8,Sikkim 5,Nagaland 4,Arunachal Pradesh, Mizoram ,Manipur and Tripura with 3 higher education institutions respectively. It is a fact that most of the student who wish to pursue higher education they move to other parts of the country stating the reason that they may receive quality education. But is that true? Whether a country like India is able to satisfy needs of the youth and able to provide quality education that may prepare those to compete with adequate skills and potential compared with other countries? Definitely the answer will prompt us to rethink on the education system.

Planning commission, Govt. of India published its Annual Status of Higher Education of States and UTs in India, 2012. "This report, *Annual Status of Higher Education in States and UTs, 2012* (**ASHE, 2012**) maps the higher education systems in all State and Union Territories (UTs). The report provides socio- economic profile, institutional and enrolment data, growth trends, key indicators of higher education, and labour market information with a view to create a framework for holistic thinking of the higher education in the States and its linkages with the demographic trends and schooling on one hand and economy and labour markets conditions on the other. Issues of access, equity, infrastructure, staffing and financing are covered where possible".

University and University Level Institutes in India:

The country has 299 universities, 140 private level universities, 130 deemed universities and the number of central universities are 44(According to the record of UGC in Sept 2012). Apart from that 389 institutes of national importance (INI). All the universities put together amounts to a total of 652 universities.

Annual Status of Higher Education in States and UTs, 2012 (ASHE, 2012), Planning Commission, Govt. of India

Table 1: Universities and University Level Institutes in India

Type of University	India (As on 17.09.2012)	Percentage
State University	299	46
Private University	140	21
Institution of National Importance	39	6
Deemed University	130	20
Central University	44	7
Total	**652**	**100**

Source:UGC

In the eleventh five year plan the country has experienced a massive growth in the number of educational institutions and the prime focus was the central universities. Each of the states has at least one central university except Goa. Central government has given all necessary assistance and support both for infrastructure and academic matters. The increase in the total number of institutions has risen to 51 percentages and is remarkable in the Indian higher education.

Table 2: Growth of Central Institutions during the Eleventh Plan

Type of Institution	2006-07	2011-12	Increase
Central Universities	19	40	21
Indian Institute of Technology	7	15	8
Indian Institute of Management	6	13	7
Indian Institute of Science, Education and Research	2	5	3
School of Planning and Architecture	1	3	2
National Institute of Technology	20	30	10
Other technical institutions	15	15	0
Total	**70**	**121**	**51**

Source: MHRD,UGC

The same situation exists in the case of degree awarding institutions. There is a growth of 9.5 percent of degree awarding central institutions,6.8 in case of state institutions and 7.5 percent by private institutions.

Category	2006-07	2011-12	Increase	Growth Rate (%)
Central Institutions				
Degree Awarding Institutions	75	138	63	13.0
Colleges	58	69	11	3.5
Diploma institutions	14	24	10	11.4
Sub total	**147**	**231**	**84**	**9.5**
State Institutions				
Degree Awarding Institutions	253	316	63	4.5
Colleges	9,500	13,024	3,524	6.5
Diploma institutions	2,151	3207	1,056	8.3
Sub total	**11,904**	**16,547**	**4,643**	**6.8**
Private Institutions				
Degree Awarding Institutions	80	191	111	19.0
Colleges	13,706	19,930	6,224	7.8
Diploma institutions	7,220	9,541	2,321	5.7
Sub total	**21,006**	**29,662**	**8,656**	**7.2**
Total	**33,057**	**46,446**	**13,383**	**7.0**

Source: MHRD,UGC

State	Value
Delhi	47.9
Uttaranchal	36
Pondicherry	29.1
Goa	28.3
Chandigarh	28
Mizoram	26.5
A&N Islands	26.2
Sikkim	24.8
Himachal Pradesh	23.9
Maharashtra	21.
Chhatisgarh	20
Haryana	19.
Tamil Nadu	19
Jammu & Kashmir	18.
Karnataka	18.
Andhra Pradesh	16.9
Nagaland	16.1
Gujarat	15.9
Meghalaya	15.4
Arunachal Pradesh	15
Madhya Pradesh	14.9
Manipur	14.8
Kerala	13.1
West Bengal	11.9
Tripura	11.4
Orissa	11.3
Bihar	11
Uttar Pradesh	10.9
Punjab	10.8
Rajasthan	9.6
Jharkhand	9.4
Assam	9
Lakshadweep	5.3
D&N Haveli	4.4
Daman & Diu	2.3

Source: Statistics of Higher & Technical Education, MoHRD, 2009-10

The data shows the alarming rate of growth of higher education both in terms of numbers and enrollment. How can a developing country like India can go in hand to hand to support such a huge enrolment and ease the access to higher education of the prospective student community? It is understood that the predominant problems that is

being faced by the higher education is the access to higher education and quality concerns. In this context MOOCs can play pivotal role. This may be a potential solution that help education to reach the unreached thereby increase access and to improve the quality of education. Let explore the concept of MOOCs.

MOOCS-Meaning and Definition:

MOOCs stand for Massive Open Online Course. The term MOOCs was coined by David Cormier[2](Cormier and Siemens, 2010).The name MOOCs was used to describe a twelve week online course, "Connectivism and Connected Knowledge" offered at the University of Manitoba,Canada in Fall semester 2008 and the course was designed by George Siemens and Stephen Downes. A total of 2300 students enrolled as "open" for the course of which 25 matriculated. These particular MOOCs were known to be cMOOCs and it denotes connectivist MOOCs and it differ from the latest MOOCs known to be xMOOCs originated in 2011 contributed by Andrew Ng and Jennifer Widom.

MOOCs are an acronym for Massive Open Online Course and describe the web based online classes designed for the use of large number of participants across the world. Generally students enrolled for online courses are required to participate in online lectures, watch video –audio programmes in built in the online platform and make use of interactive sessions both with students and faculties facilitating the programme. The course contents in MOOCs are typically oganised in digital form containing small units that could be completed in 10-15 minutes. Similarly students are required to attempt self evaluative question given at the end of each unit or at the end of units that provide them scope to evaluate one's own learning. At the same time students are supposed to attempt assignments and to submit the reports online.

MOOCs generally do not require tuition fees or provide academic credit. One of the key advantages of MOOCs compared to traditional course is the flexibility in undergoing courses. Most of the MOOCs definitely do have entry and exit periods but are not fixed that provide opportunity for the participant to enroll for the course at their own convenience. Once the students are enrolled, they are bound to complete the course contents as prescribed by the course structure. This key feature of MOOCs is an advantage since the participants can select their own time slots and able to proceed as per their wish. This underlines the principle of self learning as advocated by the constructivist philosophy of learning. Constructivist philosophy emphasis self learning and such a factors are being taken care of and given due consideration in MOOCs. Here students are supposed to complete course contents, evaluate and to introspect the progress of one's own learning.

As discussed above,MOOCs represent Massive Open Online Courses. Let us examine each of these terms:

Massive: The traditional courses (face-to- face) usually accommodate participants (students) ranging from fifties to hundred and is small in size while the peculiarity of MOOCs is that it can accommodate participants ranging from form one to hundreds, thousand's, lakhs etc. Irrespective of the number of participants enrolled for the programmes, MOOCs has the capacity to accommodate and complete academic programme offered by the MOOC course providers. Keeping this base argument, the terms "Massive" is involved in MOOCs. Massiveness denotes the number of participant's engaged in undergoing academic courses. To cite, many of the academic programmes offered as of now have few students while it amounts to thousands in others. On the other hand massiveness cannot be misinterpreted in terms of the number of teachers/assistance providers involved in the programmes but generally accounts for the number of participants.

George Siemens (2010) defined 'massive" as anything that is large enough that you can get sub-clusters of self-organised interests. Three hundred plus students could be one benchmark; another could be Robin Dunbar's number of 150 people, which is the maximum after which the group starts to create smaller fractions.

Open: MOOCs are open and openness has varied meaning in the context of MOOCs. Firstly MOOCs are offered to any individual across the world irrespective of previous qualification and academic degree earned. It provides opportunity for enrollment to any MOOCs irrespective of the qualification of the participant and so MOOCs are open to everyone and should not require any academic degrees for enrollment. For example, an individual who has passed fifth standard or tenth or any higher educational degree like doctorate can join for the same course. The second meaning of openness refers to the freedom of access of MOOCs. Traditional courses offer admission to academic programmes generally twice in year while MOOCs are offered throughout the year. Similarly these courses are available in any internet platform like website, blogs, wikis or any multimedia open repositories. So MOOCs does not make use of any rigid learning platform and so participants have the flexibility to choose the desired learning platform as they wish. The final interpretation of openness pageants the extensive use of open

contents which are published in the course modules. These course module/contents are made available to public and the participants are free to reuse at their convenience.

Online: The term online is pretty much understandable as it is a common term since long and refers to something related to internet. MOOCs are offered via internet and do not require the physical presence of the participants who take up the courses. The participants who have the internet connectivity can join for any MOOCs form anywhere in the world and this is being cited as the most attractive feature of MOOCs. The distinctive feature that MOOCs are available in internet provides flexibility for those aspire to enroll for such course at any time at their own convenience and freedom.

Learning contents of MOOC generally reach the student community in the form of course modules which are digestible without spending much time over it and is delivered via internet. The learning modules are supported with inbuilt possibility for live chatting, downloading of audio-video files that supplement course contents, downloadable reading scripts, link to other useful websites for further queries, space for plenary discussions, plat forum for exchange of ideas through discussions, other kinds social media activities underlines the term "o" stands for online in MOOCs.

Course: Traditional definition of course states that it comprises of series of activities commonly called learning activities that are accomplished in prescribed time interval to attain the learning objectives as specified by the course. For example in programmes related to mathematics building sense on numbers and its use in daily life are spelled as few objectives of learning mathematics at elementary levels. On completion of the course at elementary level, children comprehend the stated objectives. Similar to face to face courses, MOOCs are courses in two ways;

Firstly MOOCs are delivered for fixed time interval usually short in length that range from two to four weeks. It is clear that all MOOCs have a start point and end point. It may extend to few months too. During the short duration the participants are expected to comprehend and attend the learning activities as stated in the programmes via online.

Secondly similar to face to face programmes where in students attend programmes, participate in teaching learning activities and finally subjected to evaluative procedures in multiple forms to qualify for the award of academic degrees, in MOOCs participants are subjected to various quizzes and assignments. The evaluative tests are either objective or subjective but the varied forms of tests are to be completed online.

Significant Features of MOOCs:

During the last decades the world has experienced the emergence of new forms of learning that advocates the extensive of use of internet and the culture of learning is hybrid in nature that employs the judicious mixture of components of both face to face and online learning. This resulted in the birth of a new kind of learning system referred as MOOCs. The significant features of MOOCs are as follows:

- MOOC course do not require any entry requirements for enrollment. Students aspiring to enroll for traditional courses and professional courses (MA,MSc,BTech,MBBS,BArch,BPharm etc.) must be a either graduate/plus two or else qualified in an entrance examination conducted for the same purpose. But anyone can join for MOOCs irrespective their educational background.

- Admission/Enrollment to MOOCs is not country/regional biased so that anyone irrespective of origin of country can enroll for MOOCs offered by any other country. This provides ample freedom to learners to join for MOOCs offered by any MOOCs provider platforms. For example a learner form the country Canada can join for MOOC course offered by IIT's located in India.

- Mostly MOOCs are offered through online. Generally registration and completion of MOOCs are possible through online and the learners receive course related information via internet through MOOC course providers. The courses are also completed via online. Unlike in traditional programmes, text books and other study materials are absent in MOOCs instead the learning materials are available on internet. To supplement learning online audio/video programmes, pre loaded lecture series, social media supported chat facilities for interaction with peers and teachers, online submission of assignments and participation online tests are made available. The physical absence of teachers and participants is a major feature of MOOCs.

- MOOCs usually run for two or three times in a year unlike traditional academic programmes. Traditional courses admit student's each academic year that provides students limited facility for enrollment. The

student who misses an academic year, are forced to wait till the next academic year while in MOOCs admission is possible throughout the year. The flexibility in admission makes MOOCs distinctive from other courses.

- Many of the MOOCs are of short in length and duration. This emphasis the theories of learning in the sense that the attention power of learners are limited and are not able to comprehend study materials for a longer period. Those who attend MOOCs are able to complete learning contents much ease as they study materials as small modules supplemented with content concentrated links, audios, videos and lecture series.

- The participants of MOOCs require spending only 1-2 study hours for around 5 weeks. Generally the courses run for 2-5 weeks (exceptional cases ranging to 2-5 months) and hence the participants has to put in few hours for study to complete the learning tasks/assignments. During the short interval of time the participants have the facility to interact with peers, teachers, share experiences/ideas, watch audio/video materials, attempt evaluative questions etc.

Major MOOC Providers:

Across the world the academic community is experiencing the service of countable number of MOOC providers, amongst few are listed below;

Coursea: This was originated as result of the academic effort of Professors, Daphne Koller and Andrew Ng of Stanford University. Coursea is the world's biggest MOCC platform that offers various online courses belonging to different faculties of various well established universities spread across the world.

Udacity: It is a private owned company and grown as MOOC platform in the year 2012.Udacity emanated with the academic work of few former professors of Stanford Universaty namely Sebastian Thrun, along with Mike Sokolsky and David Stavens.

EdX: It is the academic results of joint work of two famous universities, Harvard University and the Massachusetts Institute of Technology. EdX started with an aim to provide online courses to poor people deprived of main stream education.

FutureLEarn: One of the latest MOOC platforms that comprises a consortium of 12 major universities in United Kingdom including Open University of UK, Cardiff etc.

How MOOCs Help Indian Higher Education?

Do India able to provide access and quality education to the millions of youths aspiring innovative skill-job oriented higher education degrees? The answer to such a potential question would definitely be 'no'. A close analysis of the long decade education system followed after Indian independence would compel us to say 'India won't be able to satisfy the educational needs of the creative young aspirants'. Why is it so? The major few concerns that bring dark image to Indian higher education are access, quality and cost. Since India nearing to cross the 125 crore digit, undoubtfully one can say the country may fail in providing access to education especially higher education. Similar situation prevails in maintaining quality of education. Even though most of the Indian universities offer higher degrees, it is so sad that the quality of these courses is appalling. Thirdly the cost of education per student is so high that many of the students can't dream of it. In this context MOOC have big role in transforming Indian higher education.

MOOCs are free online courses accessible across the world via internet irrespective of the background, social and economic status s of the aspirants. The quality of courses, less cost per student and non-rigidity in admissions make MOOCs attractive to the people. Since thousands of students can join at same time, it is available via internet and the openness nature of the programmes brings people close to MOOCs. A country like India has countless number of advantages if they implement MOOCs as a supplement to the traditional higher education programmes.

Conclusion:

The tech savvy era creates wonders and paves way for innovations that result in emergence of creative way of providing quality education to meet the challenges of privatization and globalization. A country like India shows much interest in privatization of both school and higher education as part of vested interest. This creates more gaps between the poor and rich. For those deprived of higher education due to varied reasons still dream of

earning academic degrees but for them it remain a dream . The problem of access, quality concerns of the prevailing education programmes etc. is a barrier to the right of the individual in obtaining higher education. To an extent MOOCS, a newest technology supported educational programmes will be of great help to individuals irrespective of nation, social status and economic conditions.

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