Microncosmos International Journal of Research (MIJR)

www.mijr.org

Massive Open Online Courses (MOOCs) for School Education in India: Advantages, Challenges and Suggestions for Implementation

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Abstract

Education is the backbone of any country. In India Right to Education encompasses the compulsory and free education to children between 6 and 14 years. But because of diverse sociological, geographical and political situation to achieve the target is far from reality. With changing time, new and innovative technologies make it possible to spread the seed of education to unreached and MOOCs (Massive Open Online Courses) are one among them. MOOCs have various advantages over traditional teaching but challenging too. Implementation of MOOCs for school education requires technical expertise along with army of trainers. MOOCs will provide additional support to the learner as well teacher and also in teacher training programmes. MOOCs will be more beneficial for out of school children and in technical education. The MOOCs should be in blended mode and if Government adopts any strategy for certification as par with regular education, the MOOCs will be boon for India. A comprehensive model for MOOCs delivery is the need of the hour.

Article Details

Submission: 27-08-2015
Re-submission: 30-08-2015
Publication: 31-10-2015

Key Words:
Massive Open Online Courses, SWAYAM, Open Educational Resources, OER, School Education, Educational Technology

Introduction

Correspondence courses were the only mode of distance learning prior to digital era. Learning material in the form of hard copies was being circulated among the learners and there was hardly any support to extra educational resources. Early forms of synchronous and asynchronous medium of instructions like radio, telephone and television provide extra resource support to the learners. However, distance learning with radio and television were having different limitations and flaws.

In 21st century the distance education has changed a lot in form of online or e-learning and with increasing online presence, open learning opportunities, and the development of MOOCs (Massive Open Online Courses) has taken a giant leap. The "MOOCs" are basically the courses which are in online mode; provide 24X7 support to the learner on Computer/mobile or any other such device connected with internet. These are "Open" that normally requires no prior qualifications to inter the course, can be accessed by anyone and "Massive" includes large or very large numbers of learners. The term "MOOCs" was originally coined by Jabe Cormier of the University of Prince Edward Island in 2008.

Status of MOOCs in India

The Open and Distance Learning (ODL) system has been expended into a dynamic and vibrant mode of

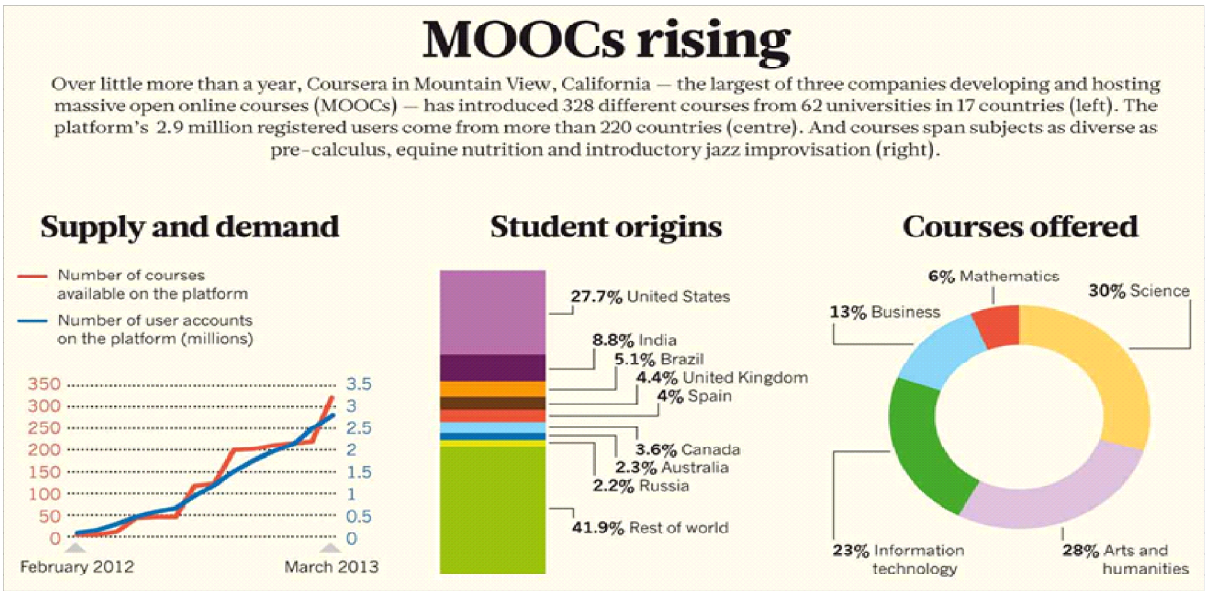

Fig. 1. Courtesy of Nature magazine

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Citation: Sharma, Y.P. (2015) Massive Open Online Courses (MOOCs) for School Education in India: Advantages, Challenges and Suggestions for Implementation. *Microcosmos International Journals of Research*, 1(2): 1-5.

teaching and learning over period of time in India that comprised of one national open university, 13 state open universities and more than 200 distance education centers functioning under conventional universities and private/autonomous institutions. More than four million students are enrolling in the ODL programmes and account for about 22% of the total enrolment in higher education (Mukherjee and Mishra, 2013; MHRD, 2015).

In due course, the online learning systems have also been introduced to provide education in a digital platform, which gained massive popularity due to the ease of access and relaxation of eligibility criteria. Recent statistics released by Coursera suggests that 8.8% (Fig. 1) of the students enrolling for MOOCs were of Indian origin, (Worldrop, 2013). India occupies the third position in the world in terms of university enrolment and with its increasing growth rate; it could be easily percept that India would have a vast academic domain. In spite of possessing this vast education domain, the major part of it is based on the traditional classroom based teaching and regular courses, especially in school education.

According to Decabo report 2014-16, the e-Learning industry in India was valued at INR 18.41 trillion in 2010/ 2011. Increasing Internet penetration, low-cost existing coverage and rising demand are expected to help this market develop strongly in the near future. These are because of:

- Increasing Government initiatives to promote E-Learning.
- The growing adoption of technology.
- The shortage of quality education, and Convenience and affordability factors.

In spite of this situation, a colossal fissure exists practically between the regular and distance learning courses, in terms of excellence and academic status. However, from a separate viewpoint, the regular courses in higher education from renowned universities have always been rigorous eligibility criteria. MOOCs thus offer the left over students have to access to higher education.

Within India, there has been a steady growth in the adoption of blended or hybrid learning models and even complete online delivery models. Many of the Institutions in the country like Indian Institute of Technology (Mumbai) has successfully delivered courses on edX. Government and private institutions such as Dr. BR Ambedkar Open University, Acharya Nagarjuna University, Annamalai University, Amity University and Narsee Monjee Institute of Management Studies have launched their distance degree programs in online mode. Many training companies have initiated courses in areas such including Big Data, Healthcare, Law, Finance, Digital Marketing and more. There has been an emergence of online assessment companies who are supporting these online learning programs by providing rigorous assessment tools (Gupta, 2015). NPTEL (National Programme on Technology Enhanced Learning) a conglomerate of IITs and IISc also running MOOCs benefiting large number of engineering students, who were aspire to teach by Teachers of such premier institution. Government of India is providing funding to these courses under NMEICT (National Mission on Educational Information and Communicational Technology) but certification is provided by NPTEL coordinator, the validity of which is doubtful for applying to higher education and government jobs (Press Information Bureau, 2015).

MOOCs for School Education in India

To realizing the goals of National Policy on ICT in School education and National Curriculum framework, the Government of India launches ICT curriculum and National Repository of Open Educational Resources (NROER) in 2013. Under the ICT curriculum 3 years diploma programme was launched as a pilot project in all the Jawahar Navodydya Vidyalas and NROER is intend to provide "Open Educational Resources" (Sharma, 2014). With new government initiatives such as the Digital India Initiative to drive up the internet penetration and the launch of SWAYAM (the indigenous MOOC Platform), more companies emerging in the space and a very favorable demographic dividend, you can expect to see a lot of action in the field of online education in the coming years.

National Council of Educational Research and Training (NCERT) and Central Board of School Education (CBSE) have been entrusted with the task of developing MOOCs for school education by MHRD, GOI. National Institute of Open Schooling (NIOS) has also initiate the "Virtual Open School" (VOS) with the help of Centre for Media Resources for Asia (CEMCA) to provide online access to courses and resources to distant learner.

Advantages of MOOCs for School Education

- **Supplementary support to both learner and teacher:** MOOCs will provide resource support to teacher in addition to text book and to learner also if teacher is not available or learner missed the class.
- **Engagement of learner and Mentor:** MOOCs encourage both teacher and learner in many ways. Through chat, hangout, telephonically and discussion over the web.
- **Wide coverage:** The best thing about offering MOOCs is it reaches a wider audience, especially those which are out of reach. For those who can't take up a full time course can go for these online courses.
- **Language support:** As India is multilingual country,

MOOCs provide an opportunity to create and disseminate the courses in as many as language. A learner can take the course of its choice of language and the same resource can be translated in different language.

• **Accessible beyond the physical boundaries:** MOOCs can be accessible by any one from any place. There is no need together at one place.

• **MOOC encourages flipping the classroom:** Teacher-student contact time usually used for lectures could be used differently, e.g. for discussions, experiments, project and group-work, working with peers etc. Students watch lectures online at home and interact with faculty regarding their doubts while in class.

• **To help to prepare for entrance exam:** MOOCs will be proven beneficial for the preparation of competitive exams as they provide concept based support.

• **Instant progress:** Learner can instantly see his/her progress during the course.

• **Multimedia digital resources:** Multimedia resources in various formats are available in the courses for better understanding of a concept, which is normally, cannot be easily understood from textbooks.

Thus, in countries like India where most of the schools are running with few teacher MOOCs will be advantageous to provide quality education. However, with advantages, challenges do come that make it more difficult for MOOCs to reach their target audience. But it depends on institutes as to how they overcome these challenges and make it prominent. The ever biggest challenge of organizing MOOCs in India for school education will be the infrastructural problem. Some of the other challenges are given below:

• **MOOCs demand digital literacy:** To train the instructor will be the biggest challenge.

• **Certification:** Certification will also be the other challenge. Weather the learner is able to get admission or job on the basis of such certifications.

• **Real time answering during lecture:** Real time answering the questions is also not possible during the lecture session as these will be pre recorded.

• **Different Role of Instructor:** Another major challenge is the different roles of instructor. Having a large number of participants also poses hurdle in communication between instructor and students.

• **Relying on Multimedia Content:** This is yet another problem which the user faces. As the entire course is offered online, both faculty and students have to rely on multimedia content. The course contains presentations, audio lectures, etc, all these through online medium. Not every student has the access to such multimedia and engages to it entirely.

• **Examination/Assessment:** Currently Multiple choice based questions are the only possible way to assess the progress of learner.

Suggestions for Implementation of MOOCs

• **Centralised mode of delivery:** There should be a centralised system for delivery of MOOCs in all the areas, viz. School education, Higher education, Technical education and Teacher education. As the MHRD is intend to launch the indigenous "SWAYAM" platform, all the courses from NIOS, NPTEL etc should be ported to SWAYAM.

• **Training to Mentors:** Training to run the online courses should be imported to the mentors. As it is not possible to train all the mentors in given time frame, a specially designed MOOC to run MOOCs should be develop to train the mentors. Because if one wants to develop the MOOC, it is important first to do the MOOC.

• **Infrastructural setup:** Since each state has been equipped with some sort of ICT infrastructure developed at SCERTs (State Council of Educational Research and Trainings), SIETs (State Institute of Educational Technologies), SIEs (State Institute of Education) etc. These institutes should be entrusted with the task of developing MOOCs. In addition to this technical infrastructure should strengthen at remote places through proper surveys.

• **Teacher Training:** MOOCs should be developed for training the in-service teachers. This will reduce the workload of the mentors in two ways: first it will finish the dependency on the resource persons and second the trainee teachers will develop resource during the training.

• **Involvement of RMSA (Rashtriya Madhmik Shiksha Abhiyan):** Since ict@school and teacher training has been part of RMSA, its involvement in MOOCs should help in streamlining the MOOCs activities.

• **Parallel with regular examination:** MOOCs should be given parallel weightage as per regular class room teaching. Students who are unable to take admission in some reputed schools, at least has the provision to attend the MOOCs from reputed faculties.

• **Examination/Assessment of learner:** A centralised system of examination should be developed for MOOCs on the pattern of regular class examination. Currently assessment in MOOCs conducted through multiple choice questions.

• **Certification of MOOCs:** Certification of MOOCs is a big policy issue as for as school education is concerned. CBSE should be given the task for certification after proper examination as suggested above.

• **MOOCs in regional languages:** MOOCs should be developed in regional language, giving a choice to the learner to use his/her choice of language.

• **Credits to MOOCs certification:** MOOCs certificate should be eligible to take admission in higher classes in regular teaching and for getting a job (government as well as private) and in service teachers who attend the MOOCs should also be given due credit (promotion etc.) otherwise the charm of attending MOOCs will be lost with time.

MOOCs model for India

MOOCs across the globe are being run by various organizations, universities and even by reputed schools. Courses ranging from one week to few months are available. But in India we need a very comprehensive model for MOOCs as we are looking to achieve our targets to eradicate literacy and implementation of Education for all protocol. Fig.2. describing a comprehensive model for MOOCs in India. First of all we needs a "National e-library" (As NROER hosting resources for school education) (Khan, 2015) where all the resources created by various stake holders weather related to higher education or school education to be curate at one place. Indigenous "National e-library" has numerous benefits over the use of "YouTube" or other repositories. The indigenous MOOCs platform will be available with input hubs at various places across the country. Resources from National e-library should be used to develop MOOCs. The MOOCs developed for school education will be made available as par with classroom teaching. That will help the students from teacher deficient schools to be prepared for exam. The courses developed for higher education by reputed institution should provide an opportunity for other students to interact and listen to imminent faculties. The MOOCs for Technical education, Vocational Education, Adult education etc should also be available at their respective places in Higher or School education system. Resources from National e-library should also be utilized as separate entity to use in class room teaching apart from using in MOOCs. Resources should be freely

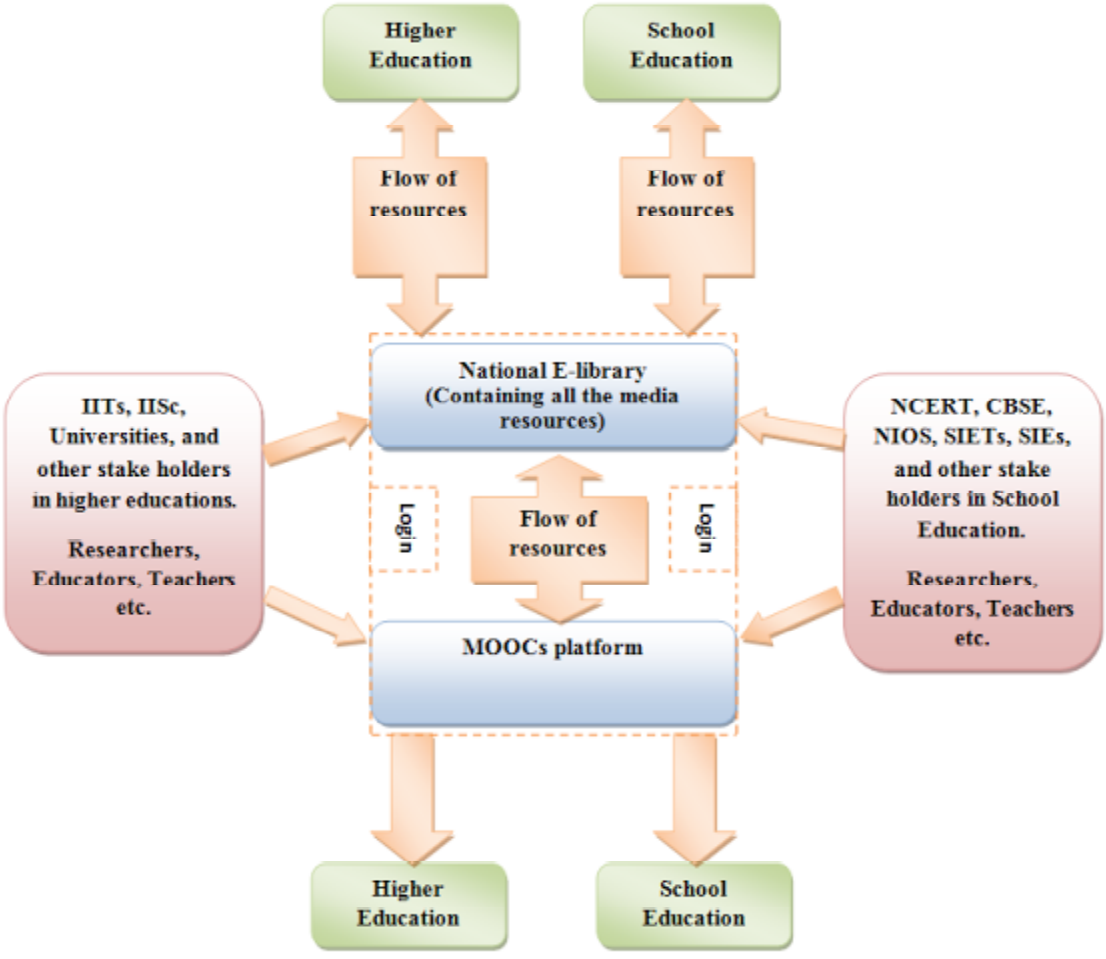

Fig. Digrametical Representation of MOOCs Model for School Education in India

downloadable from e-library without the process of registration or login. But to upload the resources one needs to be registered and login.

Conclusion

MOOCs will provide a way forward for quality education in India, where good teacher in government sector is a matter of concern. Still many students don't have access to schools, especially girls and those having access, crying for good education. We are struggling to reform the teacher education system, who we believe to enhance education scenario, and reform the whole education system is a like a mirage. The blended mode of teaching would help the teachers and students to have access to large number of good educational resources and will provide good opportunity to access the education from eminent teachers with affordability. The sociological, geographical and political barriers in education can be overlooked by making MOOCs as parallel to regular school education. To encourage teacher and learner to MOOCs should be motivated by proper planning like promotion for in-service teachers and jobs, admission to higher classes by learners.

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