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MOOCS: A NECESSITY IN HIGHER EDUCATION OF INDIA

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Abstract:- MOOCs (Massive Open Online Courses) are distinct from other online education platforms as it has a structured platform, with a timeline, a traditional syllabus, structured discussion and assessment, which may be peer based and/or machine based. Being free, is in reach of anyone who is interested in learning and is having internet facility. The majority of the population in India earns less than $2 a day, for them affording exorbitant fee of higher education will be impossible. Consequently, majority of the Indians will be denied higher education unless there is revolution in higher education. Large numbers of students do not enrol themselves for tertiary education because of various reasons like high fee, high cut-offs etc. These students can be educated by designing courses to complete their vocational and traditional training. In the next decade, the number of eligible candidates for tertiary education will rise enormously but as the infrastructure will be inadequate to give admissions to all of them, and then the non-traditional methods will be looked for. Initially, the well-known open national university of India must transform some of the online programmes into MOOCs by adopting principles of xMOOC and cMOOC optimally). Later, the other regular universities can follow the suit. A process of creating MOOCs must begin with private and public partnership so that all the universities of India can use it in their curriculum.

Keywords:MOOCs; higher education; online courses; massive open online course; distance education.

INTRODUCTION

Massive Open Online Courses (MOOCs) are courses offered online by many Institutes and Universities through various platforms. These courses being online can be accessed by anyone who has internet connection with moderate speed. Most of the courses are free but some platforms may charge for certificates or credits, which may be acceptable by the universities for higher education. An opportunity for non-traditional or returning students to enter in the higher education environment without initial cost, making higher education more accessible to larger group of students (Fomin, 2013).

The term, MOOCs was coined by Dave Cormier and Bryan Alexander in 2008 to describe a particular model of online courses developed by Stephen Downes and George Siemens based on first of the two pedagogical model cMOOC and xMOOC, which are based on learner and design centred pedagogy respectively (Grainger, 2013). The two key features of MOOCs are open access and scalability, which will make them very popular in developing countries like India. This idea of open is distinctly different from the idea of open in the open movement, where open is used in the sense of

being free from the intellectual property stipulations that restrict the use and reuse of content. It is in terms of teaching process and curriculum (Cormier and Siemens, 2010).

MOOC is a great tool for any developing country where it is difficult to afford higher education due to financial constraints of learning community. With the advancement of technology in developing countries and reach of the internet in both rural and urban areas, the MOOCs are becoming popular with time. MOOCs are augmentation rather than replacement of formal educational models, and universities should contribute to improving public knowledge by offering free online courses (Cann, 2013). This free access makes it possible for people all around the world to register in MOOCs (Mackness et al. 2010). A new model built around massive open online courses (MOOCs) that are developed locally and combined with those provided by top universities abroad could deliver higher education on a scale and at a quality not possible before (Aggarwal, 2013).

India, a developing country is 3rd largest in terms of university enrolment in the world after the US and China (Saxena, 2013). The statistics reveals that MOOCs University Pre-Opening enrolments were 27.15% from USA, 16.9% from India while 13.05% in China (Combes and Anderson, 2006). In another research, it is found that students account for 42.3% of all HarvardX MOOCs registrants followed by India having 9.47% and Canada 3.81% (Nesterko, Sergiy O, et al., 2013). The MOOCs are boon for Indian learning community as millions of people can access the international educational resources online. They need internet ready laptop/desktop or tabloid, which has fully functional browser as it need to play videos and quizzes. The online resources can be accessed any time and can be even stored offline or printed depending upon the type of resource for further reference (Saxena, 2013). India, being a developing country can have lot of benefits of MOOCs especially in terms of higher education. It may encourage universities both public and private, to develop online learning more deliberately, and Open Educational Resources (OER) from MOOC courses may find their way, into the teaching of local institutions. MOOCs will have impact in two ways: improving teaching and encouraging institutions to develop distinctive missions (Daniel, 2012). MOOCs can be described as a grand experiment in higher education and explaining MOOCs in simple terms as "a large research project by many institutions and corporations" is an easy way to explain this new educational tool to the curious prospective student (Fomin, 2013).

Some important features of MOOCs in context of higher education are:

Many of the MOOCs are time bound, which means that a learner has to complete the course within a given span of time and acquire certain minimum marks or grades to achieve certificate of accomplishment, while, other MOOCs are self-paced, in which a learner can complete it at his own convenience. It is convenient for professional and students whose occupation may cause time constraints. A learner may also audit a particular course without engaging himself or herself into the hassle of completing the assignment, tests or course for any credit or badge. Those who are interested to get an overview of a course can take advantage through it. It is very difficult for everyone in India to go abroad for studies but one can study in India itself and augment their knowledge through MOOCs. Now, it may not remain a dream of many to get education from leading Universities of the world like MIT, Stanford, and Cambridge without visiting it.

Purpose & Aims of Studies

The purpose of this study is to understand the importance of MOOCs, its optimal use by the learners and finally future of the MOOCs in India. The study includes an in-depth study of the following:

1. What is the population of students in higher education? How much will it be in next ten years? Is our present traditional higher education system will be able to make up for population bursts in next few years? Do we have enough infrastructural resources to meet the demand?
2. What is the present situation of distribution of population in rural and urban areas? Will educational needs of learners in rural areas be met in coming years?
3. What is the present situation of communication system in India? An analysis related to total number of internet users in India with its projection in next 10 years.
4. How Indian education system can take advantage of MOOCs? How MOOCs can be used to

educate such a large population of India?

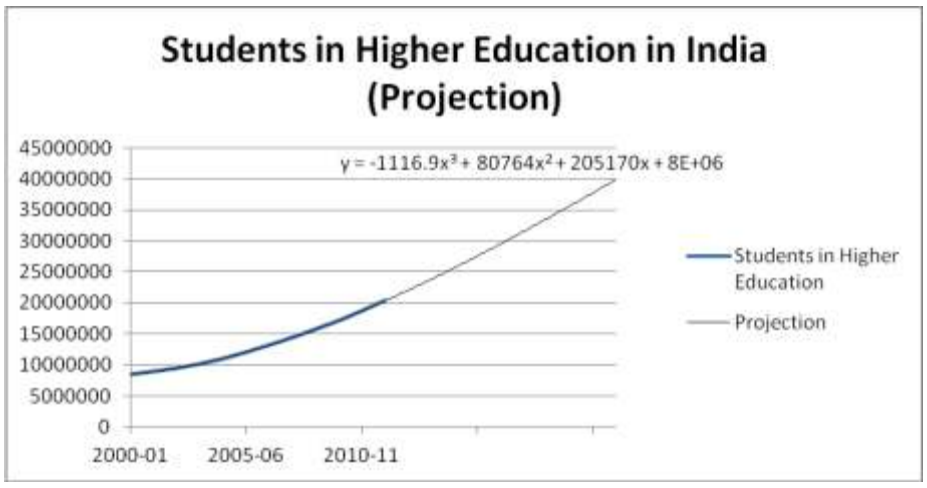
METHODS

The proposed research is both quantitative and qualitative study derived from the different sources. To analyze comprehensively we have drawn various types of graphs for the data to be analysed. The data is collected from various official websites including United Nations Economic and Social Commission for Asia and the Pacific, Government of India, Reserve Bank of India etc. The linear regression on the various data is used to understand the role of technology in MOOCs in the coming decade. The linear regression method, being exploratory rather explanatory is best suited to this study. The projected technological and infrastructural advancement has also been discussed using regression analysis based on cubic polynomial equation.

FINDINGS

By 2030, India will have the largest population in the world and in the higher education as well. As of now, India has second largest population in the world and also second largest number of students in higher education. Increasing urbanization and income levels will also drive demand for higher education in India. In 2011-12, about 20 Million students were in higher education. The graph clearly indicates that number of students is increasing every year in higher education. Using trend line based on cubic polynomial regression, it can be observed that population of students in higher education will be 40 M which will be the double of 2011-12 (Figure 1). The present infrastructure will not be able to cater to such a large influx of learners. It is the need of the hour to support the present education model with a non-traditional model, if traditional models not doubled in this span of time. MOOCs will ultimately affect the landscape of higher education enrolment, but in the meantime, institutions can use this exciting new technology to assist students in search of college or university of their dreams (Fomin, 2013).

Figure 1 (Projection of number of students in higher education)

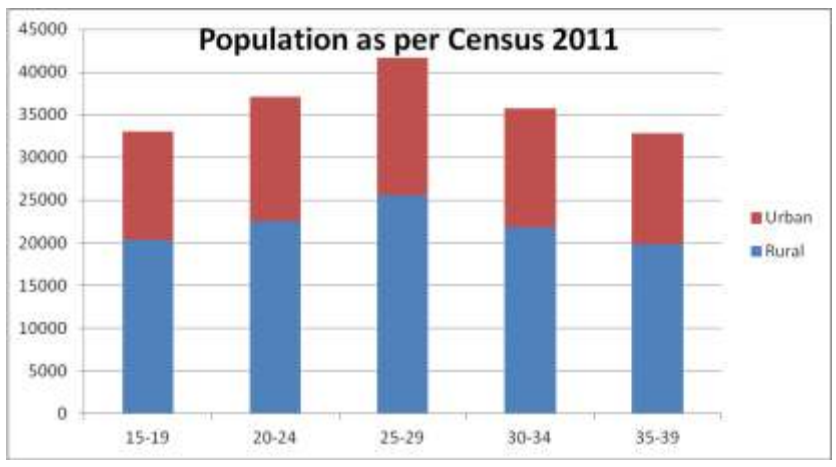


SOURCE: Computation based on data accessed from : http://www.unescap.org/

The Indian population pattern as per the Census 2011 is evident that most of the population lies in the age group 25-29 years followed by 20-24 years which will be seeking higher education now. As rural population is much more than urban (Figure 2), therefore the requirement of technological infrastruture is much needed in rural areas where the traditional educational system is itself weak. The present infrastucture needs a big expansion and new infrastructure need to be created. The soaring cut-offs and cut-throat competition itself indicates the scarcity of institutes of

higher education in India.

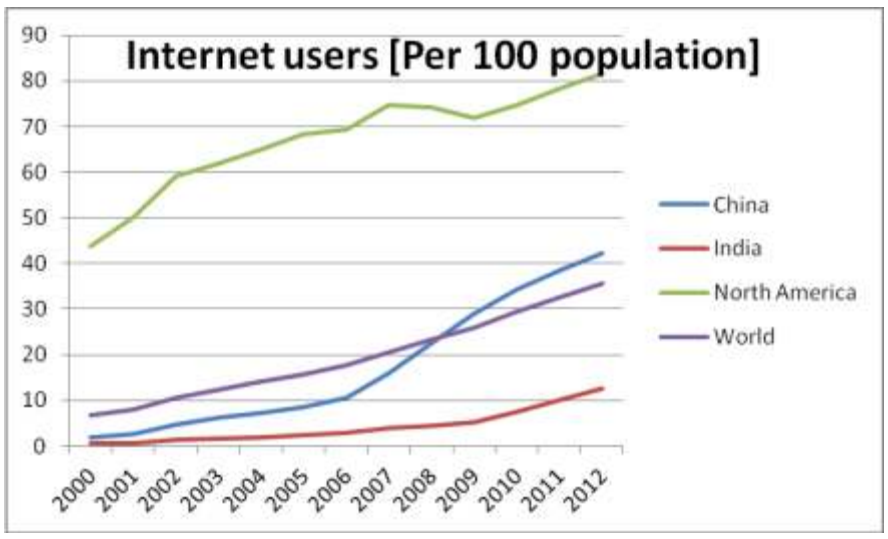
Figure 2 (Populations as per Census 2011)



SOURCE: Computation based on data accessed from : http://www.unescap.org/

The internet users in India as compared to China and North America are much less and even lesser than average of world users (Figure 3). MOOCs seem to be reinforcing the advantages of the 'haves' rather than educating the 'have-nots'. Better access to technology and improved basic education are needed worldwide before MOOCs can genuinely live up to their promise (Emanuel, 2013). The participants in MOOCs are mostly limited to highly motivated learners who have access to high-bandwidth internet connections, and the majority have already earned at least a bachelor's degree. These may be new audiences for many existing college and university courses and programs, but it appears that MOOCs are mostly educating the educated and are therefore increasing the divide between those who have access to education and those who do not (Hollands and Tirthali, 2014).

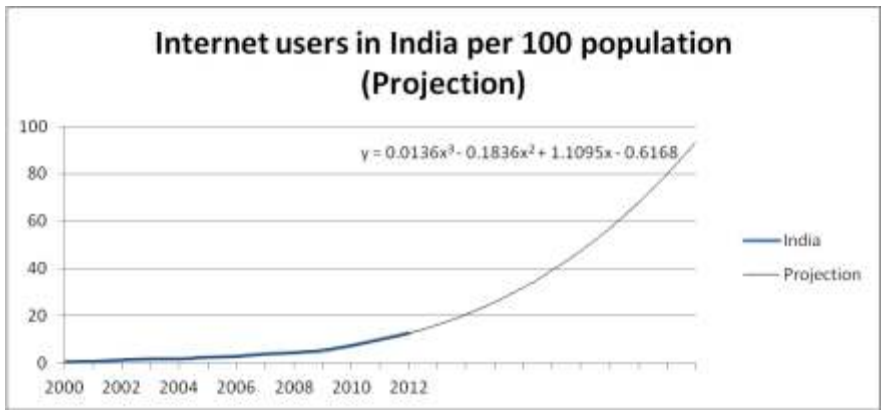
Figure 3 (Internet Users per 100 population)



SOURCE: Computation based on data accessed from : http://www.unescap.org/

In the chain of value and benefits that is currently being built across the socioeconomic fabric of our knowledge societies, e-skills largely remain a missing link. E-skills need to be learned and better distributed across all layers of societies and all parts of the world (Lanvin, Bruno, and Pamela Passman, 2007).

Figure 4 (Internet Users in India per 100 Population (Projection))

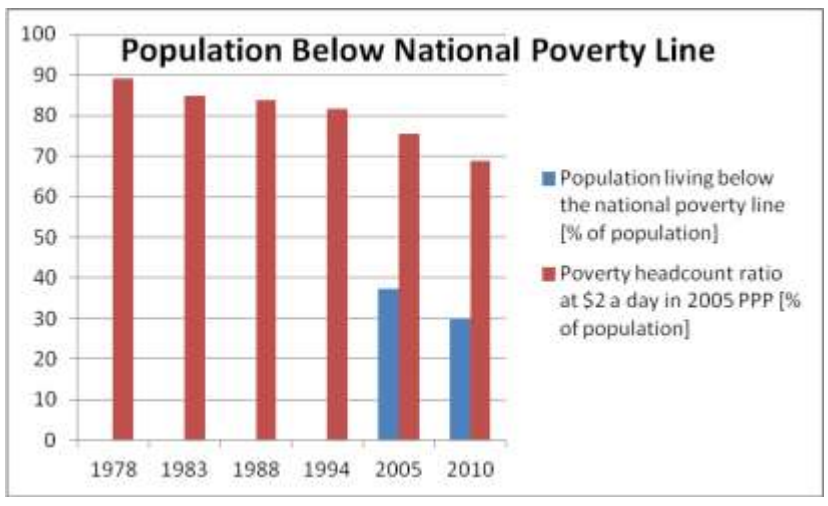


SOURCE: Computation based on data accessed from : http://www.unescap.org/

The cubic regression lines are very encouraging and shows that with the present rate of tecnological development, India will achieve more than 90 per 100 population in next 10 years (Figure 4). This indeed will be able to cater the internet demands of the population which will be using MOOCs. Today, India stands third after US and China in number of students registration in MOOCs. But, with such a better infrastructure, India will be one of the leading countries.

The poverty in India is a major constraint in pursuing higher education for the majority of the population. The population below the poverty line (based on MRP Consumption) is 29.8 and 21.92 in 2004-5 and 2009-10 respectively (Figure 5). The majority of the population earns less than $2 a day, for them affording exorbitant fee of higher education will be impossible. Consequently, majority of the Indians will be denied higher education unless there is a revolution in higher education.

Figure 5 (Population Below poverty line)



SOURCE: Computation based on data accessed from : http://www.unescap.org/

DISCUSSION

We have elaborated various factors including demographic extremities in terms of populations and poverty, which will make the entry of the MOOCs friendly in India with certain constraints. MOOCs are distinct from other online education platforms as it has a structured platform, with a timeline, a traditional syllabus, structured discussion and assessment, which may be peer based and/or machine based. Since MOOCs are free and there is no penalty for failure to complete, many learners are enabled to drop in (and out) of courses at their own convenience and this should be a cause for educational celebration rather than criticism and represents learner choice and independence (Davis, Hugh et al., 2014). MOOCs promise to open up higher education by providing accessible, flexible, and affordable and fast track completion (Yuan and Powell, 2013).

MOOCs have the potential to become a global higher education game changer where employers may come to recognize MOOCs as an alternative credential to the traditional three- or four-year degree and international students may think it better to stay at home and take a MOOC than spend thousands of dollars to attend an international school (Dennis, 2012). Presently, MOOCs have helped to create new markets from people not well served by more traditional universities (Norton, Sonnemann, and McGannon, 2013).

A potential factor for the success of the MOOCs is number of English speakers in the population. There is a relationship between the registration rate of courses in MOOCs and the number of English speakers in a country (Nesterko et al., 2013). The features of MOOCs and from a developing countries' perspective to conclude that due to a complicated set of conditions ('access', language, computer literacy among others) prevailing in developing countries, MOOCs may not be a viable solution for education for a large proportion of people in these areas of the world (Liyanagunawardena, Shirley and Adams, 2013). India has significant English speakers about 125M, accounting for 9.47% of registrants in HarvardX. USA and India account for most certificate earners with 29.41% and 10.1% of all certificates respectively. The relationship between enrolments, completion, and course length is an important issue for MOOC course design, balancing the higher enrolments with the lower completion rates of longer courses (Jordan, 2014).

One of the most popular Open University is Indira Gandhi National Open University (IGNOU), which offered 226 academic programmes in 21 School of studies during the session 2013-14. It registered about 7.22 Lakhs students through 67 Regional Centres, 2667 Learners Support centres and 29 Overseas Centres in 15 different countries. It has 33,212 academic counsellors and 287 teachers, which gives pupil teacher ratio about 22:1. The cumulative audio, videos are 2186 and 4427 respectively, which gives an average of 30 audio/videos per academic programme.(IGNOU, 2014). A new model built around massive open online courses (MOOCs) developed locally and combined with those provided by top universities abroad could deliver higher education on a scale and at a quality not possible before (Aggarwal, 2013). The MOOCs are affordable alternative to higher education and vocational training, as students can complement their studies on particular topics related to their professional development and hobbies, generally free of charge (Gutiérrez-Rojas et al., 2014).

Initially, this national university must transform some of the online programmes into MOOCs by adopting principles of xMOOC and cMOOC optimally. Later the other regular universities can follow the suit. The universities in this process may have to bear financial burden (Prahalad, 2014).They should develop MOOCs with certain pedagogical and other aims. Major universities such as Stanford are taking the lead, "trying to integrate and embed digital learning into the fabric of the entire university" — and trying to master the new technology before it masters them. Virtually everyone participating in this upheaval agrees on one thing. Colleges and universities will change — perhaps dramatically — but they will not disappear. "No one says that all education has to be online," (Waldrop, 2014). However, the enormous potential of the digital revolution does not mean that we no longer need face-to-face pedagogies and the physical campus (Susan, 2013). This clearly means that we have to be very selective and objective in designing MOOCs. In hybrid models—online plus face-to-face—learning can be accelerated, but there are many open questions

(Susan, Singer and Bonvillian, 2013).

MOOCs, harness the power of huge enrolments to teach in new ways, applying crowd-sourcing technology to discussion forums and grading and enabling professors to use online lectures and reserve on-campus class time for interaction with students (Lewen, 2012). The broader implications of MOOCs in higher education are possibility of having two (or more) tiered system. Where the top tier of campus-based provision would be for the rich and super bright while the second tier a development of the MOOC model with delivery to the masses at affordable prices, with improved technology and pedagogy to provide success for the majority, not a 90% drop out (Inkelaar, 2013).

Now, country must begin process of creating MOOCs with public and private University partnership so that all the universities of India can use it in their curriculum. Microsoft Research is working on a pilot project to develop online classes in the style of MOOCs, taught by leading Indian professors, which would fit the existing curriculum at Indian engineering schools called as Massively Empowered Classrooms, or MEC (Bartholet, 2013). The National Programme on Technology Enhanced Learning known as NPTEL is a joint programme launched in 2003 executed by several Indian Institutes of Technology and Indian Institute of Science with its objectives the creation of curriculum material in higher education in all of science and engineering (Krishnan, 2009).

Numerous opportunities exist for the development of an ecosystem for specialized functionality in the same way that Facebook, iTunes, and Twitter created an ecosystem for app innovation (Siemens, 2012). The edX, the non-profit start-up from Harvard and the Massachusetts Institute of Technology, has 370,000 students in its first official courses. Coursera, founded just last January, has reached more than 1.7 million — growing “faster than Facebook,” boasts Andrew Ng (Pappano, 2012). MOOCs are a new and amplifying phenomenon, in the context of shrinking budgets and rising education costs. (Welsh, Dianne and Dragusin, 2013).The distinction between "campus-based" learning and "distance" learning will be blurred in the years ahead and Twentieth-century technology is finally becoming infused into 21st century higher education (Belkin and Douglas, 2014).

CONCLUSION

India is one of the largest countries having second largest population in the world and largest population of young adults as well. The education system must be strong and large enough to face the challenges of increasing population. It must be able to produce the man force to cater the requirement of 21st century. The goal of education is to provide students with the skills they need to achieve their own life goals, not to retain individuals in a classroom. The higher education must meet the international standards so that the youth gets equal opportunities in the job market globally. If the higher education does not meet the international standards then the youth of India will go abroad for higher studies, which will affect economy of the nation. One time investment, openness and scalability of MOOCs will certainly help the Indian education system and conserve Indian financial resources and culture.

The MOOCs will not replace colleges and universities. These will augment the traditional higher education with a potential to solve the problems of higher education of India which includes infrastructural, high cost and faculty shortage. Finally, the time has come both open and regular universities must work together to create MOOCs on different subjects at central level which can be used by all universities of India. It will facilitate standardization of academic curriculum and reach will be immense as well.

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