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MOOCS: THE TECHNOLOGICAL GAME CHANGER IN HIGHER EDUCATION

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ABSTRACT

The rapid increase in the use of information technologies throughout educational institutions is changing the way teachers and students learn, work, and establish collaboration. The learning cycle is an on-going process that is designed to improve the quality of, as well as collaboration among learners. Recent announcements from top Universities to turn to new forms of educational delivery called "MOOCs" (Massive Open Online Courses) have captured the interest of academics and students in higher education. MOOCs are one of the most prominent developments in online higher education in recent years aimed at unlimited participation and open access via the Web. With MOOCs, the teaching method is moving from the traditional transfer learning model where the teacher serves as the repository and transmitter of knowledge to the flipped classroom model where the learner interacts with other students, peers, and has flexible access to all information and resources around him before coming to the classroom. With the huge amount of online educational material, this has become a useful and beneficial method in teaching. The value of MOOCs comes when you use them to create hybrids that are the best of both worlds. Rather than having the instructor lectures during class and then send the students home with assignments, many instructors are now using MOOCs to flip the classroom. The more we know about effective uses of technologies for teaching and learning, the faster we can adopt these new practices, facilitate their proliferation across higher education, and increase student success". These massive open online courses which have global reach, unlimited participation, and open access over the internet via a combination of social networking and video podcasts is attracting a huge

variety of students of different ages, nationalities, backgrounds, abilities, interests, etc. It's all based on a connection where you have the ability to learn, interact, and collaborate not only locally and globally but also universally from anywhere and at any time. With MOOCs providers in the USA (Coursera, edX, Udacity), Europe (FUN, Iversity), UK (Future Learn), Middle East (Rwaq, Edraak), Australia (Open2study) or in India (SWAYAM, NPTEL) students can work on learning content outside of the classroom, at their own pace, and practice the application of what they learned in class. India has the third largest system of education in the world. Only about 25.5% are able to pursue higher education. MOOCs can help in increasing the gross enrolment ratio in India. Accessibility can be increased through MOOCs because you cannot keep on opening more and more universities and colleges, you require faculties, you require infrastructure etc. The government of India is making sincere efforts in this direction. MOOCs are being developed in India under the aegis of MHRD by various "National Coordinators". All these MOOCs, which are being developed under the aegis of MHRD by various national coordinators will ultimately be uploaded or hosted on the technical platform "SWAYAM" available at www.swayam.gov.in. According to many surveys, it has been found that faculty members are not rejecting technology, in fact, most of them believe in the ability of technology to bring transformative change to education but at the same time, they feel that commercial considerations, rather than pedagogical considerations are driving the phenomenon of MOOCs. This paper will attempt to provide insights into recent developments of MOOCs.While it's too soon to say if MOOCs represent a substitution to traditional courses, they certainly bring a transformative change to our actual education in general and to the way our academic institutions are working. In higher education, there is a lot of excitement about MOOCs and universities are still working hard on how to use them and what impact they could have on the value of a degree.

KEYWORDS: MOOC, SWAYAM, NPTEL.

INTRODUCTION

The status of education has always been the primary factor of a nation that defines its academic capital, human resource, and vision of development. Sheathing this education sector with the recent advancements of technology would be one of the most concrete steps towards national development. Massive Open Online Courses (MOOCs) have evolved as a new paradigm of digitized open education which could be implemented in a massive domain of India. In a developing country like India where a significantly large number of people live

in rural areas and cannot afford quality education, MOOCs can definitely be considered a game-changer. On one hand, with a more flexible and massive approach, MOOCs would be able to impart quality education over a huge domain of audience. On the other hand, it would nurture the tremendously viable business opportunity in the education sector. In this context, India is viewed as a potential leader and game-changing superpower of education in Asia pertaining to Vision 2020. This paper highlights the high potential and challenges involved with developing Massive Online Open Courses (MOOCs) for capacity building and in growth coupled with the accessibility of higher education.

The unprecedented growth of ICT in forms of personal computers (PC), laptop, handheld wireless devices etc have added new dimensions to the teaching-learning process. People increasingly prefer the use of ICT because of its popularity and the convenience of use at any time and anywhere. The primary advantage that such tools offer to education is the re-usability aspect along with interactive learning. This is more relevant for distance and self-learners. The computational power of the current generation PC/laptops coupled with access to resources via secured and reliable data links have provided the learner new vistas of acquiring know-how and skills through online mode. Lately, with the popularization of 3G/ 4Gwireless communication and concurrent use of wired data connection with higher speeds have enabled uniform remote access to learning resources and these resources become more efficient, lively and user-centric.

Wide Acceptance of Online Learning

The various objections to online learning have largely become muted in the wake of repeated studies showing that distance learning is no less effective than classroom-based learning. But while prejudice against distance learning has lost the day, this does not mean that there aren't many students whose needs are better accommodated by a course that takes place on campus. For example, many institutions focus on asynchronous learning when it comes to their distance learning offerings. That means that courses are designed for convenience so that students can participate whenever it's convenient for them rather than at a set time. The most convenient part of the online course is live interaction, the sort that's part and parcel of a course in a classroom. It's possible to even duplicate live sessions online, and more and more institutions are moving in that direction, but at present, those students who are inclined towards real-time interaction with their faculty members and peers are more likely to have reasons to prefer classroom teaching.

MOOCs are a form of e-learning in a very structured manner. The word "MOOC" was coined in 2008 by Dave Cormier. "MOOC" is an acronym where "**M"** is for massive because there can be unlimited or massive enrolments; "**O"** for open i.e., no qualifications are required for enrolment in a MOOC until and unless you want to obtain grades/credit. **"O"** for online, as this content is available online and can be accessed through the web; and "**C"** for the course having specific learning outcomes. A MOOC can be of any duration, but normally for one-semester paper, we have one course as MOOC. For example, in MSc chemistry – if there are sixteen papers, there can be sixteen corresponding MOOCs.

MOOCs are the structured courses where e-content is provided to the learner in the form of a virtual class through a web-based portal, preferably LMS (Learning Management System). They can be accessed by any suitable device i.e., desktop, laptop, tablet or smart-phones. The e-content is arranged in a logical sequence, either in topic-wise format or weekly format for learners to meet specific learning outcomes. In addition to e-content, there are various activities provided to the virtual group of learners like online quizzes, discussion forums, live chat, and live video. The MOOCs must not be taken as an automated delivery of content without a teacher, rather the role of the teacher is very important in delivering the MOOCs by providing virtual interaction to the learners. There can be one or more teacher(s) virtually interacting with the group of students to answer their queries/doubts depending on the number of learners.

The basic philosophy of the MOOC

The **basic philosophy of the MOOCs** is 4 A's - anytime, anywhere, anyone, any number of times. MOOCs are highly economical as they are made available almost free of cost. MOOCs will be like mini smart colleges and that the most important thing about MOOC is that one can decide one's own pace of learning, you don't need to be physically present in the classroom; any time convenient to you, you can.

MOOCs Providers Around the World

Since then more than 700 universities around the world have launched free online courses. By the end of 2016, around 58 million students had signed up for at least one MOOC. Many countries around the world (e.g. India, Mexico, Thailand, Italy, and more) have launched their own country-specific MOOC platform. Important MOOC providers around the world are:

1. **Coursera / United States**: Coursera officially launched in January 2012, and it was started by two Stanford professors — Andrew Ng and Daphne Koller. With over 25 million students and $146.1 million raised in funding, Coursera is the biggest MOOC/online education provider in the world. It has over 150 university partners from 29 countries and 2,000+ online courses.
2. **edX / United States**: Founded by Harvard University and MIT in 2012, edX is a non-profit organization. It's the second largest MOOC provider in the world with over ten million students. It offers over 1,500 courses and boasts more than 100+ university partners. EdX offers a number of different types of certificates programs: MicroMasters (which offer a pathway to credit), XSeries, Professional Certificate, and Professional Education.
3. **FutureLearn / United Kingdom**: FutureLearn is a UK-based MOOC provider. It is wholly owned by Open University. It was launched at the end of 2012 and now has more than six million registered users. FutureLearn has over 100 partners creating courses on its platform. Seventy-one of those partners are universities primarily located in Europe, but it also has a few universities in other countries, including the United States, Australia, and South Korea. FutureLearn offers its own credential program, which is known as FutureLearn Programs.
4. **XuetangX /China**: XuetangX is China's first and biggest MOOC platform. It was founded in 2013 by the Tsinghua University under the supervision of the China Ministry of Education Research. It's probably the fastest growing MOOC platform. When Class Central interviewed XuetangX's Chairman of the Board back in October 2016, the platform had five million users. Now that number has crossed seven million registered users.
5. **Udacity / United States**: Udacity is a tech unicorn, and it partners with technology companies to create Nanodegrees that train students for a particular job. In recent times, it has launched an AI Nanodegree with IBM Watson and a Self-Driving Car Engineer Nanodegree. The co-creators of the latter include car companies like Mercedes Benz, BMW, and McLaren. These Nanodegrees costs and they can take a few months to complete. Courses that are part of the Nanodegree are available for free, and Udacity currently has close to 200 free online courses. Udacity has also partnered with Georgia Tech to create and launch a low cost, completely online Masters in Computer Science degree. At this moment there are more than 4,000 students enrolled in the Master's

program. Udacity was founded by Stanford professor Sebastian Thrun, the man behind Google's self-driving car project.

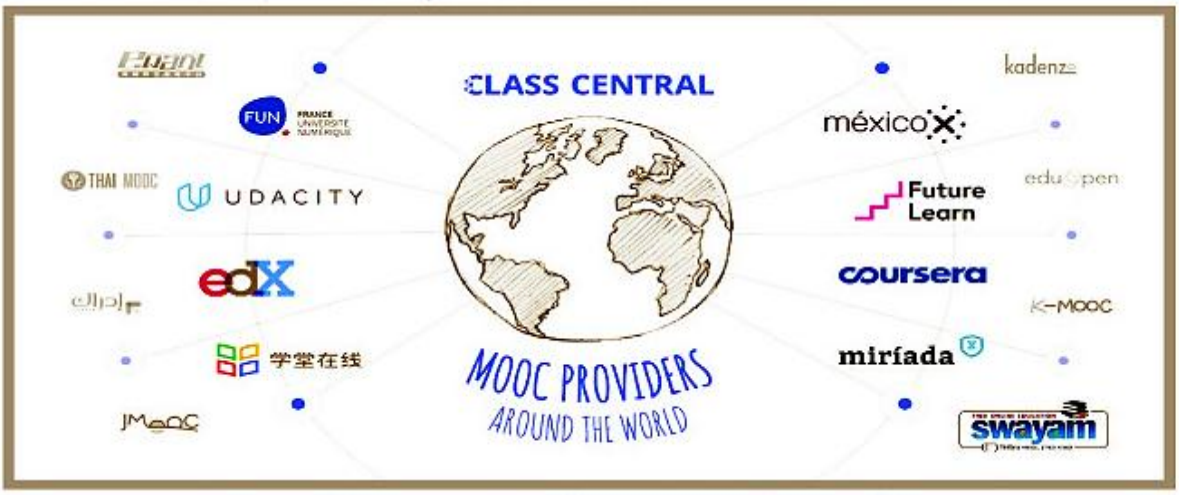
6. **Kadenze / United States:** Kadenze is a MOOC platform that specializes in the field of creative and arts education. It partners with some of the best art institutions and universities around the world to launch online courses. It was co-founded by Ajay Kapur, a classically trained Indian musician and computer scientist. He is Associate Dean for Research and Development in Digital Arts at the California Institute of the Arts (CalArts). Students can also earn academic credit for many Kadenze courses/programs.
7. **SWAYAM / India**: SWAYAM, short for "Study Webs of Active-learning for Young Aspiring Minds," is the official MOOC platform for India. Under SWAYAM, professors of centrally-funded institutions in India such as Indian Institutes of Technology (IITs), Indian Institutes of Management (IIMs), and central universities will offer online courses to citizens of India. Currently, the SWAYAM platform hosts 350 free online courses.
8. **NPTEL / India**: The National Programme on Technology Enhanced Learning (NPTEL) is a project funded by the Ministry of Human Resource Development (MHRD) of India. It has been putting video courses online from the IITs (Indian Institutes of Technology) for a long time now. In some sense, this is similar to MIT's OCW. In fact, The NPTEL YouTube channel gets twice the number of views that MIT OCW gets. After MOOCs became popular, NPTEL also launched a separate MOOC-like platform on which it offers hundreds of free online courses, mostly in the field of engineering.
9. **Canvas Network / United States**: Canvas Network might not have the big names, but they do have a number of free online courses taught by community colleges and other institutions around the world. I have seen a few Canvas Network courses move over to big providers like Coursera. Many of their courses still offer completely free certificates. Canvas Network is based on the Canvas LMS, which was developed by Instructure.
10. **Stanford Languita / United States**: Stanford has been self-hosting courses for a long time now. It uses Open edX, the open source version of edX.
11. **Miríada X /Spain**: Miríada X is a regional MOOC platform that has launched over 600 courses in Spanish and Portuguese. These courses are created by its 100 university partners, which are located in Spain, Argentina, Peru, Colombia, Mexico, Brazil, Chile, and other Spanish and Portuguese speaking countries. With over three million students, it is one of the largest MOOC platforms out there.
12. **MéxicoX**: MéxicoX is a MOOC platform funded by the Mexican government, and it has more than 40 partners (universities and institutions from the Federal Public

Administration). It has over one million registered learners, 85% of whom are located in Mexico.

13. **France Université Numérique (FUN)/France**: FUN is the official MOOC platform for France. The French Ministry of Higher Education launched the project in July 2013. FUN has 93 partners among higher education institutions that create MOOCs, including three universities in Belgium, one in Switzerland, and two in Tunisia. As of January 2017, it had launched 279 MOOCs and had more than one million registered students.
14. **EduOpen /Italy**: EduOpen is a new MOOC provider funded by the Italian government, and it launched last year in April 2016. EduOpen is a network of Italian universities, but it is also open to EU universities.
15. **ThaiMOOC /Thailand**: ThaiMOOC is one of the newest platforms in this list. It was launched early this year in March 2017. It is the official MOOC platform for Thailand. The ThaiMOOC platform is built on Open edX and currently lists around 50 courses.
16. **Federica.eu / Italy:** Federica.eu is a MOOC platform created by the University of Naples Federico II. Currently, it has over 60 free online courses listed on its platform. One of its courses, Connectivisim and Learning, is taught by Stephen Downes, who is credited with teaching the first ever MOOC.
17. **CNMOOC / China**: CNMOOC is the official website of China's high-level university Muji Union, which is an open cooperative education platform for some high-level universities in China. The platform hosts more than 400 courses from 70+ universities.
18. **Chinese MOOCs /China**: This is another MOOC provider from China. It hosts around 50+ courses from a few universities.
19. **University of China MOOC — icourse163.org /China:** The University of China MOOC seems to be yet another MOOC platform. According to its "about" page, it is an online education platform launched by Netease and Higher Education Society. It hosts more than 700 courses from 130+ Chinese universities.
20. **ewant — Education you want /Taiwan**: eWant is a MOOC platform that was launched by National Chiao Tung University in 2013. National Chiao Tung University is one of Taiwan's leading public research universities, and it's located in Hsinchu, Taiwan. It hosts more than 500 courses from 80 different universities.
21. **Edraak (Arabic) / Jordan**: Edraak means "realization" in Arabic, and this is a non-profit Arabic platform for Massive Open Online Courses (MOOCs). It launched in May 2014 and is affiliated with the Queen Rania Foundation for Education and Development (QRF). Edraak has more than one million learners registered on its platform.

22. **European Multiple MOOC Aggregator (EMMA)**: EMMA is a 30-month pilot action supported by the European Union. It aggregates and hosts courses provided by European universities that wish to provide their courses in multiple languages.
23. **Zhihuishu / China**; Zhihuishu is yet another MOOC platform from China. According to Google Translate, Zhihuishu means "wisdom book." One of the defining features of Zhihuishu is that you can also earn credits.
24. **OpenHPI / Germany**: openHPI is a MOOC platform hosted by Hasso Plattner Institute (HPI) in Potsdam, Germany. It offers courses in English and German. It was one of the early players in the MOOC space and was launched in September 2012.
25. **Gacco /Japan**: Gacco is a MOOC provider that partners with universities in Japan to offer online courses in Japenese. Gacco has over 350k students enrolled on its platform. The platform has other features like peer grading and a premium face-to-face learning service.
26. **Fisdom / Japan**: Fisdom is another Japanese MOOC provider. It was launched in February last year by Fujitsu, a Japanese multinational company. Fisdom's tagline is "Freedom is Wisdom. Knowledge is Freedom."
27. **OpenLearning /Japan**: OpenLearning Japan, as the name suggests, is a MOOC provider. It was launched by Net Learning Inc., an education service company based in Japan.
28. **JMOOC /Japan**: JMOOC is not really a MOOC provider, but it is a non-profit association aimed at promoting MOOC education in Japan. It has its own certification standards process which assesses the quality of MOOCs in Japan. The three Japanese MOOC providers listed above all have courses that have been JMOOC certified
29. **Open Education (openedu.ru) / Russia**: This MOOC provider was created by the Association "National Platform of Open Education," founded by leading universities: MSU, SPbPU, St. Petersburg State University, NUST, MISA, NRU "Higher School of Economics", MIPT, UFU, and ITMO. It currently offers 150+ courses and has more than 150,000 learners.
30. **Open Education (openedu.tw) / Taiwan**: Openedu.tw is a MOOC provider from Taiwan that offers over 180 free online courses.
31. **K-MOOC / Korea**: K-MOOC, or Korean MOOC, is the official MOOC platform of Korea. It was initiated by the Ministry of Education and first went live in 2015. Currently, it lists 280+ courses from around 20 Korean universities.

32. **IndonesiaX**: IndonesiaX is a non-profit organization that offers MOOCs made by universities and companies in Indonesia. It's a relatively new MOOC provider — it was launched in August 2015 — and it currently offers 20 free online courses.
33. **Prometheus / Ukraine**: Like many other MOOC providers, Prometheus is a non-profit organization. It was launched in October 2014, and it partners with Ukrainian universities and companies to launch free online courses. It has around 50 courses and more than 250k registered users.



Courtesy: https://www.classcentral.com/report/mooc-providers-list.

Why do Institutions Offer MOOCs?

Means, Bakia, and Murphy (2014) outline and document four major trends in how universities are using online learning: "self-paced, adaptive instruction and competency-based learning; blended learning; learning analytics; and MOOCs". The arrival of MOOCs, which allow hundreds of thousands of students to participate simultaneously in a course and are free and open to any interested participant, constitutes a phenomenon that extends preexisting initiatives to provide free, educational resources online, such as MIT Open Course Ware, Stanford Engineering Everywhere, and Khan Academy.

There has been little agreement as to what actually constitutes a MOOC and what educational or other objectives they can and should address. However, as observed by Lewin (2013), one universal impact of MOOCs is clear: "The intense publicity about MOOCs has nudged almost every university toward developing an Internet strategy". Allen and Seaman (2014) reported that, in 2013, 5% of 2,831 U.S. institutions responding to an annual survey about online learning were offering a MOOC, 9% were planning to do so, and 53% were undecided

as to whether to engage in this innovation. Larger institutions were more likely to offer a MOOC than smaller ones, as were doctoral/research institutions compared with institutions offering less advanced degrees.

The goals, structure, and pedagogical philosophy of connectivist MOOCs (cMOOCs), first offered by Siemens, Downes, and other Canadian instructors (see Downes, 2008; Cormier & Siemens, 2010) and "xMOOCs", first offered by Ng, Thrun, Norvig, and Widom at Stanford University (see Markoff, 2011; Waldrop, 2013) are radically different, with the only commonality being that they are scalable and technology based. Whereas in cMOOCs learning occurs through participant interactions with a network of individuals and participants who are expected to create, share, and build upon each other's artifacts (e.g., videos, blog posts), xMOOCs are primarily designed to deliver education at scale and involve more structured and sequenced direct transmission of knowledge.

India's Education Scenario: Why so much emphasis on MOOCs?

So now the question comes why there is so much emphasis on MOOCs and e-learning?

India has a third largest system of education in the world. India holds an important place in the global education industry and has one of the largest education systems in the world. It has the world's largest population, about 310 million in the age group of 6-17, attending school. A typical Indian student is introduced to formal education at the age of five (Technopak & Simplilearn, 2016).

In 2016, Gross Enrolment Ratio (GER) in higher education reached 24.5 percent. The government had a target Gross Enrollment Ratio of 30 percent to be achieved by FY17. The Indian literacy rate was expected to reach 75 percent in 2016 as compared to 63 percent in 2011. The national capital's total expenditure (plan and non-plan) on education, including sports, art & culture, increased from USD713.8 million in 2011-12 to USD 1.59 billion in 2016-17. India's education sector is experiencing drastic changes such as the influx of foreign universities, the emergence of e-learning platforms and changing course patterns (IBEF, 2016).

According to the NSSO survey released in 2015, the literacy rate in rural areas was pegged at 71% in 2014, compared to 86% in urban areas. As per the survey report, no significant difference between rural and urban India existed in terms of distance for physical access to primary schooling. In both rural and urban areas, nearly 99% of households reported the

availability of primary school within 2 km from the house. For accessing educational institutions providing a higher level of learning, say upper primary or secondary, a lower proportion of households in rural areas compared to the households in urban areas reported the existence of such facilities within 2 km. Nearly 86% of rural households and 96% of urban households reported upper primary schools within a distance of 2 km from the house while nearly 60% of rural households and 91% of urban households reported secondary schools at such a distance.

The proportion of persons having completed a higher level of education (graduation and above) was more in the urban areas than in the rural areas. One of the reasons could be that most of the higher education institutes and universities are situated in urban areas. According to the University Grants Commission (UGC), in 2017, India is having 789 universities which include, state, central, deemed to be and private universities and over 35,539 colleges. The distance education system contributed a quarter of student enrolments in the Higher Education System, with over 29 million students enrolled in the Indian Higher Education Systems (Technopak & Simplilearn, 2016).

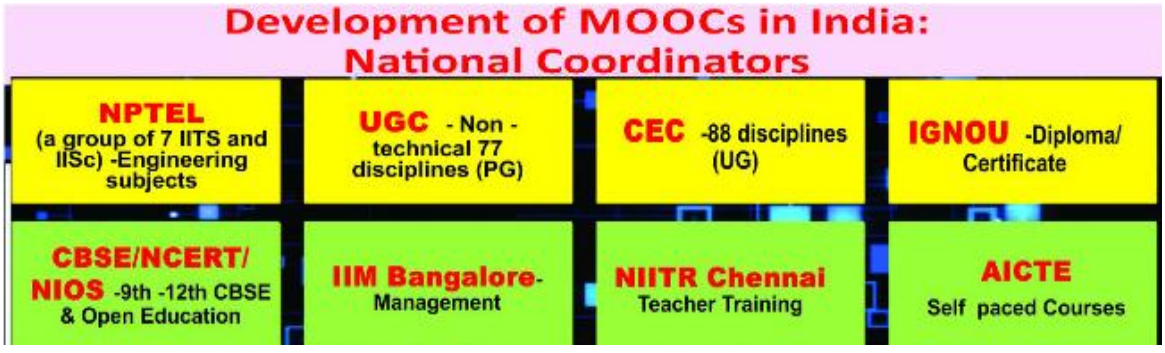
At present, we have more than 900 universities in India, nearly 50,000 colleges, 1.5m teachers and 34.2m students and if you compare with corresponding values in the year1950, there has been a considerable growth by any yardstick. But despite all this our gross enrolment ratio is only 25.5%; that means out of our all youth in the age group of 18-23 years, only about 25.5% are able to pursue higher education. And even the International ranking of our higher education institution is not very good, it is rather poor, so here MOOCs can help us a lot because the MOOCs are developed by the top experts. **It's like the best of the country addressing to the rest and all these will be available to the entire country.** Therefore, MOOCs can help in increasing the gross enrolment ratio in India. Accessibility can be increased through MOOCs because you cannot keep on opening more and more universities and colleges, you require faculties, you require infrastructure etc. So, this is an immediate advantage, which comes from MOOCs.

Another important point about MOOCs is that it will make learning **learner-centric** and interactive. This is unlike our traditional method of teaching, which is basically teacher-centric. You can feel that the face of higher education in the country is slowly going to change. Maybe we can say we are witnessing a transition phase, maybe after ten years education will no longer be limited to physical classrooms, almost everything for self-

learning will be available online. Ways in which MOOCs are expected to increase access to education include the following:

1. "Broadcasting" to global audiences
2. Alleviating infrastructure constraints domestically and in rapidly developing countries where the existing physical campus infrastructure and level of faculty expertise cannot accommodate the growing demand for postsecondary education
3. Easing the pressure on oversubscribed programs or "bottleneck" courses
4. Providing flexibility in time and place of study for nontraditional students
5. Providing a no-risk, low-cost option for at-risk students in developmental education, setting them on an accelerated path to credit-bearing courses and more timely completion of a degree
6. Increasing access to instructors skilled in specialized domains and niche subjects;
7. Flexibility for students to create their own programs using courses from various institutions
8. Continuing education or professional development for alumni and other working adults

The National Knowledge Commission (NKC), which is charged with proposing education policy to the Indian government, recommended in 2007 that the role of OER be elevated as a means for supporting access to quality education for all, for example, through the establishment of faculty professional development programs on OER creation and use (NKC, 2009). The NKC recommendation furthers the Indian government's Right to Education (RTE) vision. The government of India is making sincere efforts in this direction. MOOCs are being developed in India under the aegis of MHRD by various **"National Coordinators".**



All these MOOCs, which are being developed under the aegis of MHRD by various national coordinators will ultimately be uploaded or hosted on the technical platform "SWAYAM" available at www.swayam.gov.in.

Swayam Portal and Structure of MOOCs: Four Quadrant Approach

SWAYAM basically stands for "Study webs of active learning for young aspiring minds" and this platform hosts various MOOCs. All the MOOCs on SWAYAM have the same generic structure. Here also there are **"four quadrants":**

Quadrant I: consists of e-tutorials, which includes video and audio contents, animations, simulations, video demonstration, etc.

Quadrant II: consists of e-content, self- instructional materials, e-books, case studies etc.

Quadrant III: assessment - it gives various problems and solutions, MCQs, fill in the blanks, match, etc. and various e-quizzes and the highlight is that you get the feedbacks.

Quadrant IV: discussion forum, where the learner can seek clarifications on doubts and difficulties from the course coordinators.

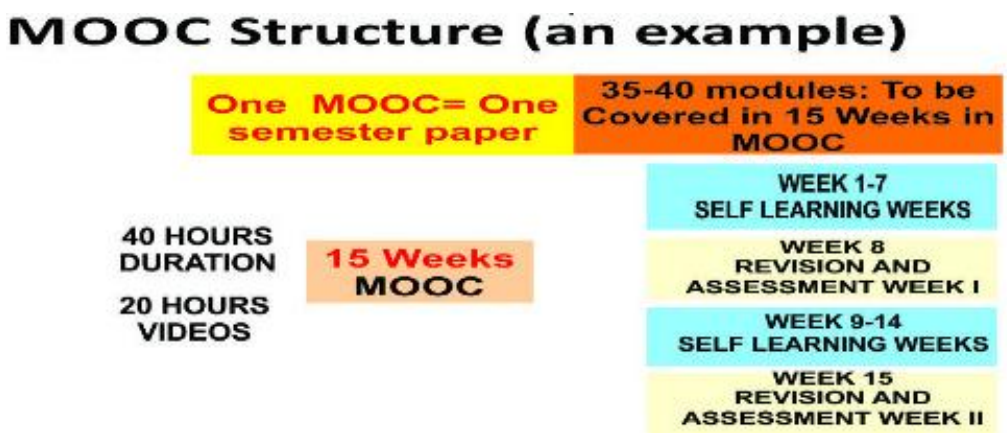
Types of MOOCs

There are normally three types of MOOCs, which have been uploaded on SWAYAM:

Self-paced courses: These are available to learner always and one can learn at own pace; there is no start date and end date of these MOOCs.

Certificate courses: Which anybody can enroll without any pre-qualification; there is a start and end date for the course as well as the last date of enrolment before which the learner must enroll. The certificate is provided on successful completion of these courses; most of them have online quizzes for successful completion; they may or may not have proctored examination. The learner may not be enrolled in any university system.

Credit courses: These are meant for students for earning credits; the student can earn credit through these courses only after their university has approved these MOOCs in their statutory bodies. The successful completion of the MOOC requires a student to pass a proctored examination.



For all the types of MOOCs, anyone can enroll for free, but for getting certificate or credit, a nominal charge has to be given. MOOCs have been introduced as a part of the formal education system in India to earn credits, wherein a student can earn up to 20% of credits per semester through these online courses called **UGC (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2016.**

MOOCs are going to be a boon for everybody in one way or the other. The need for more flexible learning paths along with an increasing desire to learn skills that can immediately be applied in the workplace has incited the "new traditional" university students to explore MOOCs' potential to provide an alternative or a complement to their degree. Reports by Kranz (2014) and Radford *et al*. (2014) have investigated this as they both identified organizations that have either used, have strongly considered using, or in the future could see their companies using them. MOOCs are a “revolution” in scaling quality instruction as they enable a “star” teacher to reach out to a large number of learners at different locations and with varying paces of learning. They consist of a set of short-duration videos that illustrate one or more concepts, which, when “learned” sequentially, constitute a course. To complete the two-way interaction essential for learning, each course has a discussion forum which is moderated by the instructor and/ or by a group of teaching assistants. Assessment is the third major component of typical classroom learning. MOOC platforms are supported by a set of automated assessment tools that enable one to handle massive enrolment. In its most prevalent form, MOOCs are not real-time — recording is done offline and then made accessible to students — through efforts are on to provide near real-time options. To give the course structure, the material is released on a weekly schedule and assessments are synchronized to ensure continuous learning.

MOOCs are still not a substitute for classroom learning if there are enough qualified teachers. In fact, in many prestigious institutions, MOOCs are being used in “flip” mode: students listen to video lectures as “homework” and class time is interactive and used for problem-solving. Clearly, in the Indian context, this experimentation is a luxury that only a few elite institutions can afford. But MOOCs form a platform that helps quality instruction reach a large number of geographically distributed students at low costs. The asynchronous nature of instruction accommodates considerable “classroom” heterogeneity that arises from unequal background exposure, differing speeds of analysis and absorption as well as varying time periods for which students can sustain concentration. The ability to rewind and replay as well

as pause to refer to the background material are game-changers. Further, short 12- to 15-minute videos, typical for MOOCs, are a real boon.

In many parts of the world, Higher Education has become increasingly unaffordable and many question tertiary institutions' abilities to prepare students for their professional careers (Harris, 2013). Reports by Arum and Roksa (2010; 2014), Van Velsor and Wright (2012) have highlighted the existing mismatch of skills between university graduates and the needs of potential employers.

Challenges

There are three critical points that MOOC providers need to deal with

"(a) lack of an effective system to measure and validate the progress of the learners, (b) how to integrate the course credits into the present system so that it counts towards a degree from a college, and (c) how do you ensure personalized guidance and mentorship" (Mehta 2017).

Many countries have chosen to engage with MOOCs in a national context. The obvious reason – which is an often overlooked premise in current discourses – is the language of instruction. While the initiators of the global idea of MOOCs are predominantly from English-speaking countries, many countries globally do not have English as a primary language. Another important issue is the implementation of MOOCs. Here some Asian countries are developing alternatives to commercialization and globalization efforts, especially American ones, by implementing MOOCs a part of a national education strategy. So far, this seems to have reached its most radical form in India, where MOOCs were implemented in the national higher education curriculum in 2016.

In some parts of the world, governments have initiated national educational programmes based on the MOOC model, aiming to meet a growing demand for education. In other parts, MOOCs have become an element of institutional promotion aiming to attract more students or offer more flexible learning opportunities. Altogether, the different MOOC practices indicate new teaching and learning patterns which need to be addressed.

MOOCs are seen as the great democratizer and believe that in the future, economics, social status, gender or geography will not determine a student's access to education or opportunity for success. MOOCs envisage a continuous education system – one that doesn't stop after

four years of college aiming to innovate and transform education, to make education accessible to everyone, and to improve on-campus learning through research."

CONCLUSION

To conclude, it can be said that MOOCs still has a long way to go. A plethora of issues shall need to be resolved until it can become ubiquitous. Stakeholders shall also need to work actively towards bringing in a variety of end users. Finally, as indicated by Albert and Sekhon (2015), there is strong evidence that the 7Cs, which influence successful corporate MOOCs, are potential game changers to ensure employees' motivation and MOOC completion. MOOCs, therefore, is becoming clear global stakeholders in enhancing opportunities for both new seekers of employment, as well as corporations providing staff development options to their employees.

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