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Haumin, Lun and Madhusudhan, Margam ,Associate Professor, "An Indian Based MOOC: An Overview" (2019). *Library Philosophy and Practice (e-journal)*. 2382.

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An Indian Based MOOC: An Overview

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ABSTRACT

A massive open online course (MOOC) is a model for delivering learning content online to a large number of people. These are online courses with unrestricted numbers of participation and open accessibility. MOOC gained popularity during the early 2010s and have been presented as an alternative to the traditional instructional model, focused on the lecturing instructor and relying on digital content that is available to all students. The present study attempt to introduce all the MOOC available in India, compare them using Similarweb pro, explain why country like India needs MOOC, its challenges and provide few points to address for proper success of MOOC.

KEYWORD: MOOC, xMOOC, cMOOC, eLearning, SWAYAM, flipped classroom

1. INTRODUCTION

A massive open online course (MOOC) represents a learning platform in an online environment which provides open access to unlimited participants, enabling more than traditional learning models and materials including recorded lectures, quizzes, interactive forums and communities. It is one of the latest additions to field of distance learning. MOOC are student friendly, for there are not long procedures or formalities or pre requisites for enrollment in a course. Not hefty tuition fees are required. Some of them are available free of cost while others only require a minimum amount (Chakravarty and Jaspreet, 2016). The resources provided are mostly video-based instructional content which is release through the platform to high volume participants. With time and place flexibility, MOOC gathers scholars and ‘like-minded fellow learners around the globe’ (Baturay, 2015). The necessity for MOOC came along with the digital era, the need of gathering knowledge at a fast pace and lifelong learning, therefore new approaches had to be considered to fulfill the learner’s needs.

2. DEFINITION and CONCEPT

The term 'MOOC', said to have been coined by David Cormier to refer to an online learning course concept, which was developed by Stephen Downes and George Siemens entitled "*Connectivism*" and "*Connectivity Knowledge*" in 2008 (12). The original concept of MOOC is to break down obstacles to education for anyone, anywhere and at any time.

Oxford Dictionaries (n.d.) defines MOOC as "A course of study made available over the Internet without charge to a very large number of people." This paper uses the term MOOC in the popular sense to refer to the xMOOC, or "broadcast" MOOC (as distinct from the cMOOC or connectivist MOOC).

According to Educause (2014), a massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance.

The meaning of the acronym MOOC is as follow:

1. **M is for Massive:** An 'M' in MOOC stands for "Massive" because it attracts tens of thousands of participants per intake. There is no limit to the number of users. A course once designed, can be accessible to a large number of participants.
2. **O is for Open:** Open means the course is open to everyone. The course is accessible, available to everyone freely. Thus the "Open" in MOOC means the Course can be accessed by (almost) anyone anywhere at any time as long as they have an internet connection.
3. **O is for Online:** The second O in MOOC refers to the fact that the course is delivered over the Internet. This might involve the distribution of video clips and downloadable readings, supplemented by plenary discussions, segregated social media activity, and the occasional synchronous event such as a live chat.
4. **C is for Course:** The term course refers to the course-like fixed starting and completion date and structured into different subject units. There can be one or more teachers. Supervision and communications options can also be offered to supplement the course.

3. WHY MOOC?

MOOCs have a remarkable ability to expand access to a large scale of participants worldwide to attend free online courses, beyond the formality of the higher education systems. It provides unique features that support a movement toward a vision of lifelong and on-demand learning for

those who are working full time or have taken a break from formal education (Yousef, 2015). It is a boon for the generation as user can obtain graduation certificate upon user's completion of that particular course, which depict an edge of education that has never been thought possible decades ago (Luaran, 2014). Learners can also participate in interactive user forums that are normally provided by MOOCs and these interactive forums help build a community for students, lecturers, professors, teachers and all of the users. The forum also provides an opportunity to user for raising a question on the doubtful areas. Cost to hire expensive trainers can be significantly reduced and the hassle for training arrangements can also be eliminated. Switching cost from traditional classroom training to MOOCs results in savings, as the subsequent maintenance costs. (Little, 2014). Unlike traditional classroom training, capacity is not an issue. MOOC allow the participation of an unlimited number of Users. The costs of bringing learners together from different continents is prohibitively expensive for traditional classroom training, whereas many MOOC offer interactive modes for online discussion among course participants, no matter where they are located.

4 WHY INDIA NEED MOOC?

The unique characteristics of MOOC are free registration, open access to everyone, no prior qualification required, self-pace (Mostly), accessible anytime anywhere and provision of certificate after completions shows the importance of an online learning like MOOC in a huge populated and economically diverse country like India. Pandit (2016) urged that "in a country like India, where most people residing in remote areas do not have adequate access to skill enhancement and quality learning, MOOC can play a pivotal role. It can be beneficial for those who are bound by financial instability, physical limitations or commuting issues".

MOOCs represent a huge opportunity for Indians in terms of an open education revolution. It could potentially give millions access and availability to high quality learning if they have Internet connectivity. First, there are more applicants than slots at top Indian universities. Second, millions of Indians live in poverty and are unable to afford or gain access to a higher education (Fox Feed, 2013). MOOC can provide the Indian students an edge required to compete in the global market. Chakrabarti says that Indian students can leverage on MOOC to stay competitive. "Given the limited capacity of seats at top US and Indian universities, these features enhance the competitive edge of Indian students in the global job market and improves their chances of admission to top US and European colleges and graduate schools" (Devgun, 2013). It

is also found that Indians are among the most aggressive users of MOOCs. Of the 2.9 million registered users of Coursera in March, more than 250,000 were from India, second only to those from the U.S. MOOCs have given Indian academics a better sense of how a lecture could be restructured into short, self-contained segments with high interactivity to engage students more effectively. It helps that India is full of young people who possess a high comfort level with technology (Pawan, 2013).

As of now Indian students comprise the second largest group taking MOOC offered by Coursera (about 10 percent), after students from the United States. A geospatial analysis of these users, based on their IP addresses, indicates the vast majority of these users are concentrated in India's urban areas, with 61 percent of users located in one of the five largest cities in India and an additional 16 percent of users in the next five largest cities. Mumbai and Bangalore have the largest concentrations of users, each accounting for 18 percent of Coursera students in India (Christensen and Brandon, 2014). No doubt about the importance of MOOCs India also developed many platforms for the citizen like SWAYAM, NPTEL etc.

5. MOOC Platform available in India

Realizing the importance of MOOCs, its ability to attract many aspiring youth, India has also initiated a good number of MOOCs platforms. Some of the MOOCs available in India are shown in table 1 below.

Table 1: MOOCs available in India

Sl.No	Name of the MOOC	Platform providing Institution	Website Link
1	SWAYAM	MHRD and Microsoft	https://swayam.gov.in
2	NPTEL	IITs,IISc	https://onlinecourses.nptel.ac.in
3	mooKIT	IIT Kanpur	https://www.mookit.co
4	IITBombayX	IIT bombay	https://iitbombayx.in
5	IIMBx	IIM Bangalore	https://www.iimbx.edu.in
6	agMOOCs	IIT Kanpur	https://www.agmoocs.in

a. SWAYAM

SWAYAM Stands for Study Webs of Active Learning for Young Aspiring Minds. It is an India Chapter of Massive Open Online Courses, indigenously developed IT platform, initiated by Government of India, which is instrumental for self-actualization providing opportunities for a life-long learning. It is an integrated MOOCs platform for distance education that is aimed at offering all the courses from school level (Class IX) to post-graduation level. SWAYAM was developed in 2014, collaboratively by MHRD (Ministry of Human Resource Development) and AICTE (All India Council for Technical Education) with the help of Microsoft and is capable of hosting 2,000 courses. The courses on SWAYAM are produced and delivered by AICTE for self-paced. The course were provided by NPTEL for engineering, UGC for post-graduation education, CEC for under-graduate education, NCERT & NIOS for school education, IGNOU for out of the school students and, IIMB for management studies.

The courses delivered through SWAYAM are available free of cost to the learners, however students wanting certifications shall be registered and offered a certificate on successful completion of the course, with a little fee. An assessment were conduct for student who wants certificate, through proctored examination and the marks/grades secured in this exam could be transferred to the academic record of the students.

The courses hosted on SWAYAM are in 4 quadrants – (1) video lecture, (2) specially prepared reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts.

The learning path and program categories available in SWAYAM are School, Certificate, Diploma, Undergraduate, Post Graduate and D.El.Ed Course.

OBJECTIVE

The objective of SWAYAM includes:

- i. Creation of content on courses from School Secondary level till Post Graduation, covering all disciplines, to be made available on the SWAYAM platform.

- ii. to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.
- iii. Repurposing of e-content courses already developed under NMEICT to fit into SWAYAM Pedagogy / Andragogy.
- iv. Develop India MOOCs platform named as SWAYAM (Study Webs of Active-learning for Young Aspiring Minds) for hosting and running thousands of courses simultaneously.
- v. Provide robust Internet Cloud (with CDN) and sufficient bandwidth for concurrent viewings of 1 Million users.
- vi. Conduct of examination and award of certificates to participants having successfully completed the course.
- vii. Provide recommendations to Institutions regarding implementation of Choice Based Credit System (CBCS) on SWAYAM Courses.

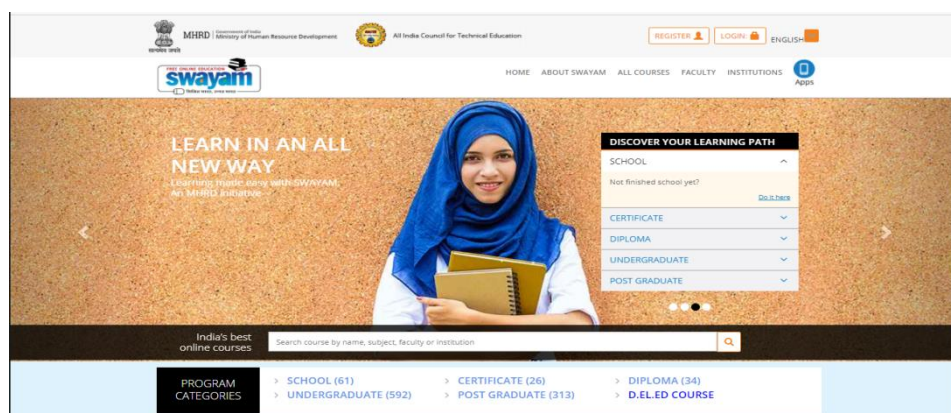


Figure 1: Screenshot of SWAYAM

b. NPTEL

NPTEL is an acronym for National Programme on Technology Enhanced Learning which is an initiative by seven Indian Institutes of Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and Indian Institute of Science (IISc) for creating online course

contents in engineering and science. It is a project funded by the Ministry of Human Resource Development (MHRD) and contents for the courses were based on the model curriculum suggested by All India Council for Technical Education (AICTE) and the syllabi of major affiliating Universities in India. The project was first proposed jointly by five IITs (Bombay, Delhi, Kanpur, Kharagpur and Madras) and IISc for creating contents for 100 courses as web based supplements and 100 complete video courses, for forty hours of duration per course.

The entire portal is powered by Google as part of their continuing partnership with NPTEL. NASSCOM is a partner in the program, and NASSCOM member companies such as TCS and CTS have participated in syllabus and content creation.

Objectives

The objective of TEL is to enhance the way students learn concepts, to enhance the learning component and to reduce the tedious and mechanical aspects of some of the current learning methods through the use of technology in a variety of forms:

a) Computer applications include:

- Computer-Assisted Instruction (CAI) that uses the computer as a self-contained teaching machine to present individual lessons.
- Computer-Managed Instruction (CMI) that uses the computer to organize instruction and track student records and progress. The instruction itself need not be delivered via a computer, although CAI is often combined with CMI.
- Computer-Mediated Education (CME) consisting of applications that facilitate the delivery of instruction. Examples include networked classrooms, electronic mail, discussion boards, real-time computer conferencing and World-Wide Web (WWW) applications.

b) Voice - Instructional audio tools that include interactive technologies of telephone, audio conferencing, and the passive (i.e., one-way) audio tools of tapes and radio.

c) Video - Instructional video tools that include still images such as slides, prerecorded moving images (e.g., film, videotape), and real-time moving images combined with audio conferencing (one-way or two-way video with two-way audio).

d) Print – instructional print formats that include textbooks, study guides, workbooks and case studies.



Figure 2: Screenshot of NPTEL

c. mookIT

mookIT is a light-weight MOOC Management System like EdX which is conceived, designed and developed at IIT Kanpur to deliver and manage a course online. mookIT Management System has been built ground up at the Computer Science department at IIT Kanpur with best-of-breed features and state-of-art technology. It has been running since 2012. It provides an instruction to learners and the architecture is highly customizable and cost effective.

According to IIT Kanpur, the underlying principles of mookIT are to ensure learning is not a fatigue, learning should scale and creating online courses should be as easy as taking them. As of now, the institution ties up with IIT Ropar to jointly give students who successfully complete the Arch4Cloud course certificates of accomplishment, while providing learners completing its MOOC on MOOC course with certificates of participation.

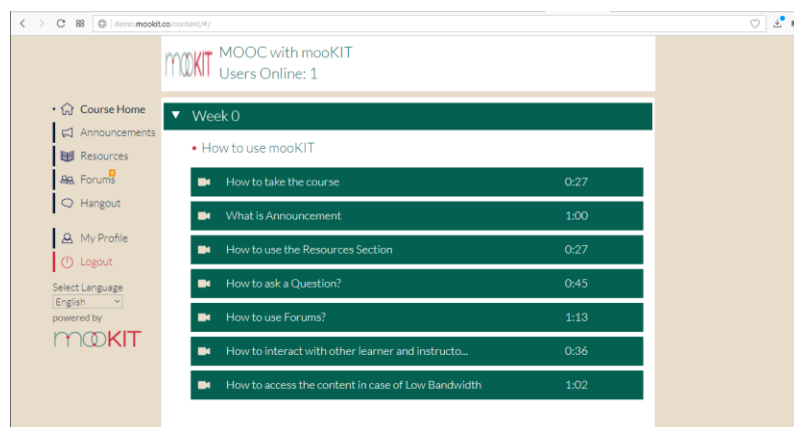


Figure 3: Screen shot of mookIT

KEY FEATURES

- i. **Adaptable to Varying Bandwidth:** Bandwidth Indicator to choose the delivery mode from video (when high), audio (when modest) or via phone.
- ii. **Discussions Forums:** For in-depth discussion the mooKIT provides Hangouts for quick and real-time interactions.
- iii. **Social Network Integration:** Access and Participate in the forums from Facebook and Twitter.
- iv. **Internationalization:** Select preferred language for navigation menu. Integrate new languages easily.
- v. **Assessments:** Quizzes and Assignments for evaluation.
- vi. **Certification:** Generate certificates from templates.
- vii. **Analytics:** Monitor and gain interesting insights as the course progresses.
- viii. **Customizable:** Adapt to the local needs. Addition of new features is easy.
- ix. **Cost Effective:** Handles high-traffic on low-end servers. It provides huge savings in hosting costs.
- x. **Progressive Apps:** Videos can be downloaded, and content can be cached locally. Both iOS and Android Apps available

d. IITBombayX

IITBX is MOOC platform developed by IIT Bombay through significant customization of open edX code base. IITBX platform is an integration of Drupal 8 with Open edX. The courses are offered using Open edX, while Drupal is used to fetch and display courses in various ways. This platform has been created for learners including academicians, students, researchers, professionals, administrative staff, and novice users, including educationally, socially, economically, physically disadvantaged groups or others that seek to transform themselves through cutting-edge technologies, innovative pedagogy, and rigorous courses. The basic aim of IITBX is to become a leading resource for learners through focused goals and principles, thus imparting quality education at scale.

KEY FEATURES

They have a specialization in Hybrid MOOCs which captures the benefits of flipped classrooms, online lectures, and live interactions with the IITBombayX course instructors. IITBombayX offers four different types of MOOCs for various learning needs.

(1) EduMOOCs: EduMOOC is targeted for learners wishing to enhance their academic knowledge in different fields of study. These MOOCs are mainly IIT Bombay extension courses, and are taught with the same rigor as those running on the campus.

(2) SkillMOOCs: It is meant to train individuals in their on-the-job skills, with a primary focus on professional development. The learners honing such skills are likely to succeed by gaining a competitive edge in their profession.

(3) TeachMOOCs: It is designed for teachers across the country, to enhance their teaching skills, by introducing them to various pedagogical methodologies. TeachMOOCs are mostly conducted in a hybrid fashion, where the initial part of learning is conducted online, followed by face-to-face sessions.

(4) LifeMOOCs: It offers courses of short duration for working professionals and others desiring to pursue life-long learning. Life-long learning is the journey that every learner seeks to undertake. The purpose of Life MOOCs is to benefit learners in elevating their careers. In addition, these MOOCs may well be used as precursors to any other domain of MOOCs.

Goals of IITBX

- i. Expand access to education for learners spread across far-flung /remote areas
- ii. Enhance teaching and learning on campus and online
- iii. Advance teaching and learning through research work
- iv. Spread quality education wherever there is internet access



Figure 4: screenshot of IITBX

e. IIMBx

IIMBx is a MOOC founded on the philosophy that management education has strong potential to transform our educational systems and that high quality education must be available to all unconstrained by limitations imposed by location, finances or prior educational background. The vision of the IIMBx programme is to use digital learning to enable widespread access to management education.

The MOOC led is by the faculty at IIM Bangalore, It offers online courses and programmes covering core and advanced business and management subjects. Online programmes by IIMBx use technology to enable anytime, anywhere learning in a global classroom. It offers management education using technology to learners through a well-balanced mix of multimedia courseware designed to bring to life the IIM Bangalore classroom experience in a virtual form. An instructionally designed mix of lecture videos, online quizzes, multimedia cases, references, readings, forum interactions and live sessions together contribute towards an effective and engaging learning experience that is flexible and self-paced. Students at academic institutions as well as working professionals can earn the IIMBx certification through our academic and corporate partnership programmes.

Goals: the goals of IIMBx are as follow:

- i. To make world-class management education accessible from every part of the world.

- ii. To empower less privileged learners in India through innovative use of technology.
- iii. To improve in-classroom teaching and learning.

Open | Knowledge | Now

IIMBx is founded on the philosophy that management education has strong potential to transform our educational system and that high quality education must be available to all unencumbered by limitations imposed by location, finance or prior educational background. The vision of the IIMBx programme is to use digital learning to enable widespread access to management education.

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Figure 5: Screen shot of IIMBx

f. agMOOCs

agMOOCs (Agriculture Massive Open Online Courses) is an online course for anyone and everyone interested in agriculture. It is a consortium led by IIT-Kanpur and other members includes, the commonwealth of learning (col), the Indian institute of management-Calcutta (IIMC) and the university of agricultural sciences-Raichur (UASR). It MOOC was developed with the understanding that agriculture is a crucial sector on which India's well-being and is the sector where the need for improved skills is the greatest and most massive. The platform promises thousands of learners to access high-quality agricultural education in a single offering. The platform provides free access to numerous high quality courses offered online by renowned faculty from the premier institute of the country. One can learn them on their own schedule and receive a certificate as well on completion.

The course is meant for users like: Student of Agricultural Universities, ii) Agriculture Scientists in ARS, iii) Faculty of SAU, iv) Agribusiness and General Management Students, v) Field Officers of Department of Agriculture / Horticulture, vi) KVK Subject Matter Specialist, vii) Farming Community, viii) Agricultural Produce Marketing Officials & Input Dealers, ix) NGOs in Agriculture

OBJECTIVES

The fundamental objective of agMOOCs is to address the need for improved skills and knowledge enhancement in agriculture domain. Their aims include:

- to help students, professionals, organizations and other enthusiastic agriculturists to improve and enhance their knowledge and skills in the Agriculture sector.
- The agMOOCs Android application provides a platform to access free online agriculture courses. It provides high quality and numerous agricultural courses online.
- High professional Agriculture faculty from famous Agriculture Institutions teaches these courses online.
- to give higher Agriculture Education to thousands of enthusiastic learners across the country.
- In addition, the people who have participated in this courses will get Participation and competency Certificates for the eligible students or candidates.
- Centre for Development of Technical Education, IIT Kanpur and Commonwealth of Learning (CoL), Canada issue the certificates to the Participated and Merit or Competency Certificates (13).



Figure 6: Screenshot of agMOOCs

6. COMPERATIVE ANALYSIS and INTERPRETATION

The analysis section of the study consists of two parts i.e. Part-I General Features of MOOCs and Part II- web statistics of the MOOCs. The study took place during 10th

November 2018 to 15th march 2019. During the study the features of different MOOCs platform are carefully observed and a criterion for analysis was created.

Part-I

Part-I of the comparative analysis consist of General feature of the MOOC platform. The general features identified are as below.

- i. Powered by: it is the technology which help in running of the MOOCs.
- ii. Contact: to contact the MOOCs creator/administrator.
- iii. Browser Support: Browser level required for accessing the MOOCs
- iv. Course Format: Whether the platform delivers self-paced courses or scheduled course
- v. Learning Model: the type of learning model is provided by the platform-online or blended.
- vi. Number of courses a platform is running at present.
- vii. Number of users already registered in any course of the platform.
- viii. Free or paid: whether the course is free or paid one.
- ix. Platform Language: it is the languages in which the platform is provided.
- x. Started on: the year of starting of the MOOCs platform.
- xi. Forum: forum for users of the MOOCs to discuss or raise a question.
- xii. Certificate: whether certificate is provided after completion of the course.
- xiii. Mobile App: Availability of mobile app.
- xiv. Assessment: Availability of test or quiz. This is mostly required for award of certificate.
- xv. Social Networking: the social networking site like facebook, twitter etc. where the MOOC provide information of the courses.
- xvi. Mobile App: mobile applications like android and iOS.

The General features of MOOCs platform are listed in Table 2.

Table 2: General Features

Sl.No.	MOOC	SWAYAM	NPTEL	IITBX	mooKIT	IIMBX	agMOOC
1	Powered by	SWAYAM	NPTEL	Drupal and Open Edx	mooKIT	Edx	mooKIT

2	Contact	Yes	Yes	Yes	Yes	Yes	Yes
3	Browser Support	Chrome, Firefox, opera mini, Internet Explorer	Firefox, IE 7 onwards, Chrome, Opera mini Safari.	Chrome, Firefox, Safari, or Internet Explorer version 9, opera mini and above	Chrome, Firefox, opera mini, Internet Explorer	Chrome, Firefox or Safari, or with Internet Explorer version 11 and above	Chrome, Firefox, opera mini, Internet Explorer
4	Course Format	Scheduled course, Self-Pace	Scheduled	Scheduled ,Hybrid, Self-paced	Scheduled	Scheduled	Scheduled
5	Learning Model	Blended	Online	Online	Blended	Online	Online
6	No. of Courses	2000+	1200+	71	60	28+	13
7	Fee	Free	Free	Free	Free	Free	Free
8	Platform Language	English and hindi	English	English	English, Hindi, Kannada, French, Russian, Ukrainian	English and Hindi	English
9	Started on	2016	2003	2014	2012	2014	2015
10	Forum	Yes	NA	Yes	Yes	Yes	NA
11	Certificate	Yes	Yes	Yes	Yes	Yes	Yes
12	Mobile App	Android, IOS and Windows	Android	NA	IOS, Android	Android	Android and IOS
13	Assessment	Yes	Yes	NA	Yes		Yes
14	Social networking site	Facebook, Twitter, Instagram	Facebook, Twitter, linkedin , google+, youtube	NA	Facebook, twitter	Facebook, Twitter, youtube	NA
16	Course downloada	NA	Yes	NA	Yes	Yes	NA

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Part II: Comparative Analysis

For comparing the MOOCs platforms, data is collected with the web analysis of the sites where the platforms are being run. According to Official WAA (Web Analytic Association) Web Analytics is the measurement, collection, analysis and reporting of Internet data for the purposes of understanding and optimizing Web usage (14).The web analytics not only measures the web traffic but can be used as a tool for business and market research, and to assess and improve the effectiveness of a website. It provides information about the number of visitors to a website and the number of page views. It helps gauge traffic and popularity trends, which is useful for market research.

For the analysis, a tool named SimilarWebPro is used. It allows the analysis of web for the platforms, as well provides the feature for comparing different web sites based on several factors. It provided parameters are website visitors, web traffic, referral, Keywords etc.

The criteria and analysis of the MOOC platform is as shown in table 3 which is followed by the interpretation.

- a. **Website Ranking:** it involves the study of the ranking of the site with respect all the website available. The study involves collection of website ranking in global and within the country.
- b. **Visitors:** It involves the study of statistics of visitors of the site. It also includes the study of Avg. Visit Duration, Pages per Visit, Bounce Rate.
- c. **Web traffic:** Web traffic is the amount of data sent and received by visitors to a website. This necessarily does not include the traffic generated by bots.
- d. **Traffic source:** In Web analytics, traffic sources is a report that provides an overview of the different kinds of sources that send traffic to your Web site, for example direct traffic (clicks from bookmarks or visitors who know your URL) or Web search engines. The metrics one can find under the general topic of traffic sources in analytics programs are as follows:

- ❖ Direct Traffic: All those people showing up to your Web site by typing in the URL of your Web site or from a bookmark.
- ❖ Referring URLs: other Web sites sending traffic to you. These could be as a result of your banner ads or campaigns or blogs or affiliates who link to you.
- ❖ Search Engines: Google, Yahoo, Bing, Ask, others. This will include organic and paid traffic.
- ❖ Other: These include campaigns you have run, e-mail, direct marketing, etc.

e. **Traffic from social media:** it is the social media which provide traffic to the site.

f. **Keyword:** It is the keyword which brought a desktop to the site.

The analytical study of the criteria's is as follow:

Sl. no			SWAYA M	NPTEL	IITBX	mooKIT	IIMBx	agMOOC
1	Website Ranking	Global Ranking	42,425	3,987	531,954	8,422,41	1,033,18	3,064,07
		Country rank	2,217	270	21,890	393,101	40,539	122,629
2	Visitors	Total Visits	774.28k	10.35 M	NA	NA	NA	NA
		Avg. Visit Duration	00:08:20	00:08:14	NA	NA	NA	NA
		Pages per Visit	9.21	6.65	NA	NA	NA	NA
		Bounce Rate	38.68%	34.85%	NA	NA	NA	NA
3	Web Traffic	Top 3 traffic by countries	India	India	NA	NA	NA	NA
			US	US	NA	NA	NA	NA
			UK	UK	NA	NA	NA	NA
4	Traffic source	Direct	35.74%	29.38%	57.04%	49.12%	67.52%	69.91%
		Referrals	14.85%	1.07%	8.35%	3.58%	0.25%	4.31%
		Search	43.18%	63.61%	29.42%	47.30%	21.36%	25.78%

		Social	2.41%	2.35%	1.85%	0.00%	7.84%	0.00%
		Mail	3.77%	3.58%	3.33%	0.00%	3.03%	0.00%
		Display	0.05%	0.01%	0.00%	0.00%	0.00%	0.00%
5	Traffic from social media	Youtube	59.41%	68.57%	100.00%	NA	100.00%	NA
		Facebook	26.02%	12.89%	NA	NA	NA	NA
		TWITTER	5.69%	NA	NA	NA	NA	NA
		Whatsapp	3.83%	6.74%	NA	NA	NA	NA
		Quara	NA	4.48%	NA	NA	NA	NA
		Research Gate	2.80%	NA	NA	NA	NA	NA
		linkedin						
6	keywords	Top 5 Organic keywords	Swayam (65.42%)	nptel (35.15%)	iitbombayx (59.68)	mookit (83.74%)	iimbx (73.41%)	agmoocs (41.16%)
			swayam.gov.in login (12.32%)	nptel login (14.40%)	iitbombayx (13.13%)	mookit app (13.07%)	iim online courses (8.28%)	agmoocs login (21.18%)
			swayam courses (2.71%)	nptel online courses(8.07%)	iitbx (9.12%)	moockit (3.19%)	how to calculate probability in excel (6.21%)	online agriculture courses free in india (17.90%)
			swayam portal(1.83%)	nptel online course (3.12%)	bombayx (6.33%)		edx iimbx certificate pdf (1.65%)	agmooc (8.74%)

			Swyam (1.65%)	nptl (1.58%)	bombay x (4.05%)		iimb online (1.62%)	basavapr abhu jirli blogs (5.51%)
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Table 3: Showing the comparative study of selected MOOC

INTERPRETATION OF THE STUDY

- i. Analysis of the website provides information about the Global ranking and of the website. Table 3 shows that Globally, NPTEL rank highest with **3,987** rank followed by SWAYAM with **42,425** and mookIT rank the lowest among them with 8,422,412 ranks. The trend is same for country level with NPTEL securing the highest 270 rank followed by SWAYAM 2217 rank and mookit ranked the lowest with 393,101.
- ii. On Visitor Table 3. Shows that NPTEL has the highest number of visitors with 10.35 M visitor so far, followed by SWAYAM. On the other hand Average visit duration, Page per view Swayam has done better than NEPTTEL. Neptal has the least Bounce rate. Surprisingly no data can be avail from other MOOCs.
- iii. On Web traffic Table 3. Shows that all the sites are mostly used by Indian and a fragment (less than 2%) is shared by different countries like US, UK, Morocco, Afghanistan etc.
- iv. On Traffic Source Table 3. Shows that traffic comes mainly from search, referrals and direct. For Swayam and NAPTEL traffic source are mainly from Search, whereas traffic source are from direct in other MOOCs.
- v. Social media is a good source of traffic. Of all the social media YouTube is the leading source of traffic whereas social media like Facebook, Quara, Researchgate, Twitter, Whatsapp are other important source of traffic from social media.
- vi. Keywords are the words which are used to find the MOOC site in a search engine. Table 3 shows that name of the MOOC platform e.g. mookIT, SWAYAM, NPTEL etc. serve as the most used organic keyword.

7. Challenges of MOOCs in India

Some of the major challenges are:

- i. MOOCs can help to a great extent to overcome higher education challenges, but there are several issues.
 - a. MOOCs will be able to make substantial impact only when the universities are able to upgrade their technical infrastructure.
 - b. The major issue with MOOCs is their evaluation mechanism. They are student focused but in most cases the assessment mechanism is not very strong.
 - c. The cost of creating the content can burden the universities with extra costs. Thus, there needs to be a mechanism to handle the financial requirements of creating MOOCs (11).
- ii. MOOCs have very low completion rates: Only 5% of enrolled students complete a free MOOC. This is not surprising. It's boring to be learning by staring into a computer screen. It's also lonely, since you are learning by yourself. And you rarely get any feedback or encouragement.
- iii. Learning outcomes aren't assessed: Even for those 5% that complete a MOOC, very few studies have been done on progress on learning outcomes. Questions to gauge such learning outcomes include: Can the students apply the concepts in a workplace setting? Can they solve complex problems synthesizing the learning? As for example, in January 2013, San Jose State University formed a partnership with Udacity to provide three MOOC classes for college credit, thereby saving college tuition cost. However, by the end of the semester, nearly 57% of San Jose State students and 73% out-of-state students had failed the courses. San Jose State has since ended the experiment.
- iv. MOOCs provide few assessments and little feedback: Assessment and feedback are an important part of education system. If completion is tied to watching a few videos and answering a few quizzes, how do you assess knowledge for higher cognitive skills like interpersonal skills, ability to abstract information and make decisions, creativity, etc? A key element missing in MOOCs is structured assessments and personalised one-to-one feedback. (Damera,2016)

- v. Infrastructure: infrastructure is another hurdle in education through MOOCs. It requires an electronic device and an internet connection. As a result, even though MOOC is free for everyone, affording an infrastructure to access is a huge of price to pay.

8. POINTS TO ADDRESS

For successful implement of MOOC, it is important to address things like:

- i. The technological infrastructure of universities and colleges needs to be upgraded;
- ii. The MOOC provides should be able to leverage the mobile phone revolution;
- iii. The largest demand for courses in India is of technical and professional fields. MOOCs that are geared towards these disciplines can really ease the burden over existing institutions.
- iv. There is a need of greater investment in the field considering the fact that India has one of the largest numbers of students accessing the MOOCs (11).

9. CONCLUSION

MOOCs are the latest addition to field of distance learning and becoming an important part of modern education system. Open participation for everyone, free access, no qualification requires is something that is needed in this era. Moreover MOOCs help one gain education from the best faculty of top universities, where admission to traditional teaching class is just a dream. It is also helpful for those who want to excel while being in jobs by gaining expertise in very minute field of their interest (Chakravarty, 2016). MOOCs are known to inculcate competency skills, innovation, learning thrust in its users.

In a country like India, where most people residing in remote areas do not have adequate access to skill enhancement and quality learning, MOOCs can play a pivotal role. MOOCs can especially be beneficial for those who are bound by financial instability, physical limitations or commuting issues. Undoubtedly, there is an increasing interest among Indian students in MOOCs to obtain standardised education (Pandit, 2016). This also resulted in the launch of a MOOC platform called the SWAYAM which is the latest of all. Realizing its importance, the Union Budget FY17 focused on providing entrepreneurship, education and training in 2,200

colleges, 500 government industrial training institutes, 300 schools and 50 vocational training centers via MOOCs. This indicates the government's intentions to uplift online education in India (pandit,2016).

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