E-ISSN: 2706-8927
P-ISSN: 2706-8919
www.allstudyjournal.com
IJAAS 2020; 2(4): 47-51
Received: 12-08-2020
Accepted: 15-09-2020

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Virtual training platforms to faculty development with MOOCs - A study with reference to Bengaluru

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Abstract
MOOCs have aimed at sensitizing the academicians to get the knowledge of the engaging online environments and fields. The unique thing of the MOOC is that it provides the education to the masses, at comparative prices and at the same time maintaining the standards. It can help the Indian students to stay competitive updating with the global market. In this context, the various types of online courses, Massive Open Online Courses (MOOCs) and Open Educational Resources (OERs) provide myriad opportunities to the people by introducing them to a global form of learning. In fact, the MOOCs exemplifies as to how the technology can provide the leap for the distance learning. MOOCs is futuristic idea that India needs to nurture and upgrade from time to time. The present article is an empirical study of the MOOCs as on-line platform in developing the teacher educators in Karnataka.

Keywords: learning, training, participants.

Introductions
Online learning uses technology for delivering the courses. Education with technology is considered as most promising development in education. With technology globalization, the concept of learning and teaching has undergone a tremendous change. Technological usage in education provides global learning environment, which allows accessing the course material anytime, anywhere, connect other learners, and get access to the content without considering any geographical boundaries. The significant changes in use of the technology in online education has seen emergence of the concept of Massive Open Online Course (MOOC). (Jyoti Chauhan, 2017) [1].

Evolution of MOOCs
The term Massive open online course was framed by Dave Cormier, while christening a course developed by Siemens and Downes at the University of Manitoba. More than 2,000 students enrolled for the course (massive), and it was delivered using various open and free to use educational resources (open) such as wikis, online forums, Google Docs, YouTube, and Facebook groups. As the name suggests, these courses are massive in terms of number and distribution of participants across globe per course, are open access, and available online. The four basic elements of MOOC are defined below

- **Massive**: MOOCs are designed for enrollment of unlimited number of participants; and if number of participant increases, no additional efforts are needed to conduct the course.
- **Open**: Courses under MOOCs are delivered free of cost, and participants do not require any predefined and specific enrolment qualifications.
- **Online**: The course is delivered through online resources *via* the Internet.
- **Course**: A full course is offered including designing of learning goals; availability of course content; and assessment of learners through quizzes, formative assessment, and summative examination for certification purposes.

The origin of MOOCs was possibly a bottom-up approach, characterized by development and promotion of MOOCs by educationists working with the students' learning, for promoting open and flexible educational practices and approaches through use of social media. However the latest surfacing of many start-ups with commercial interests suggests a shift to a more top down structured approach. Along the evolutionary path, the earliest documented predecessor of MOOC is distance learning, which started in the form of correspondence courses delivered *via* posts in early part of last century, and is still prevalent

in many parts of the world. Indira Gandhi National Open University is one such example in India.

Later, the courses were delivered *via* radio and television broadcasts, in isolation or in conjunction with both classroom and distance education. With the advent of Internet, online or e-learning provided added advantage of synchronous interactions between students and faculty. Advancements in online accessibility has revolutionized the open learning opportunities and promoted acceptance of MOOC. The scope and spectrum of MOOC has been further broadened by the introduction of peer review, peer assessment, and self-assessment in-built in to its scheme. (Rajiv Mahajan, 2019) [5]

Types of MOOCs

As MOOCs have evolved, there appear to be two distinct types that emphasize the connectivist philosophy, and those that resemble more traditional courses. To distinguish the two, Stephen Downes proposed the terms "cMOOC" and "xMOOC".

- **cMOOCs**

c stands for connectivist and is based on principles from connectivist pedagogy indicating that material should be aggregated (rather than pre-selected), remixable, re-purposable, and feeding forward (i.e. evolving materials should be targeted at future learning). cMOOC instructional design approaches attempt to connect learners to each other to answer questions and/or collaborate on joint projects

- **xMOOC**

x stands for extended and is based on more behaviourist approach. It is the type of the learning where by the learners share the ideas and there is only one instructor on the discussion.it emphasizes on coordinated assessments and quizzes (Rajwinder Kaur, 2019) [6].

Table 1: Comparison of typical MOOCs and online learning

Characteristic	MOOCs		Online Learning	
	cMOOC	xMOOC	Courses	OERs
Audience size	No limit	No limit	Limited	Limited
Enrollment fees	None	None	Variable	Not applicable
Academic prerequisites	None	None	Variable	Not applicable
Cost of supplemental materials (i.e., readings)	Free	Free	Variable	Free
Instructor/facilitator	Yes	Yes	Yes	No
Timing	Synchronous	Synchronous	Synchronous	Asynchronous[a]
Certificate of completion	Variable	Some, often for a fee	Yes	Variable
Primary pedagogical model	Student Centered, Content Creation	Instructor Centered, Content Study	Interaction with Instructor/Subject Matter Expert	Self-directed Learning
Individual Instructor Feedback	Infrequent	Infrequent	Yes	No
Evaluation	Computer/Peers	Computer/Peers	Instructor	Computer
Content Free to Modify or Redistribute	Variable	Variable	Yes	Yes

(Source: Laura. J, S. R. (2016). MOOCs and Online Education: Exploring the Potential for International Educational Development. Occasional Paper, 1-16).

MOOC Development in India

The first MOOC experiments in India took place in 2012 with a course offered by Dr. Gautam Schroff of Tata Consultancy Services (TCS) and an adjunct faculty at Indian Institute of Technology (IIT), Delhi. Also Larks Learning (Downes 2012a) as well as Sunstone (Sunstone Business School 2012) independently came up with the first indigenous MOOCs in the private sector in 2012. IIT, Kanpur developed an indigenously built mooKIT platform in 2014; IIT BombayX, a customization of the open-source edX platform, came up in 2014-15 and NPTEL content is being delivered through Google Coursebuilder since 2014. The *Swayam* platform was inaugurated in July 2017. Table 2 summarizes the major initiatives towards MOOC development in India.

Table 2: MOOC Development in India

Platform/Provider	Key Events
NPTEL (http://nptel.ac.in)	• 2006: NPTEL began as educational content repository similar to MIT Open Course Ware. It is one of largest publishers of OERs in the world today. • 2014: NPTEL MOOCs powered by Google's open-source platform Course Builder were launched. The first batch of three MOOC-like online certification courses was offered. • 2015-16: 90 MOOC courses ran in the second year 2015 and 47 in the period Jan-May 2016. 100 MOOC courses have been announced by NPTEL with scheduled dates for start and finish (July 2016-December 2016)
mooKIT (http://www.mookit.co/)	• A lightweight platform conceived, designed and developed at IIT Kanpur over the period 2012-14. • 2014: Two MOOCs were launched using this platform: a) Architecting Software for the Cloud2 and b) MOOC on MOOCs. Around 2300 students and professionals participated in it. • 2015: A course on ICT Basics was launched which was attended by students and professionals from 47 countries. The University of the South Pacific, Fiji, successfully launched and conducted a MOOC 'Climate Change and Pacific Islands' using mooKIT. • 2016: A set of five agricultural courses targeting the students and teachers of agricultural programs

	under the umbrella of agMOOCs were launched (mooKIT 2016).
(Indian MOOCs on) edX and Coursera	• The first Indian MOOC on edX targeted at a global audience ran in July 2014, attracting over 35,000 learners. • After IIT Bombay some other institutions3 offered MOOCs on edX and Coursera in 2015.
IIT BombayX	• This MOOC platform incorporating multilingual support was started in 2014-15. It is being used for delivering blended MOOCs as well (IIT Bombay 2015).
Ministry of Human Resource Development (MHRD)- recommended MOOC platform called SWAYAM	• Oct 2015: National Stakeholder Summit to brainstorm on purpose, design, development and delivery of MOOCs for University-level Credits • March 2016: Guidelines to institutions for development and implementation of MOOCs released by the MHRD • June 2016: Microsoft was awarded a contract for development of SWAYAM (TNN 2016) • July 2017: The SWAYAM portal was finally launched on July 9, 2017

(Source: Sangeeta Trehan, J. S. (2017) [8]. Critical discussions on the Massive Open Online Course (MOOC) in India and China. International Journal of Education and Development using Information and Communication Technology, 141-165).

However, a stable and full-fledged MOOC platform with consistently 'massive' enrolments (beyond, say, 100,000 registrants in a course) is yet to be built and operated in India. Interestingly, though, several adaptations of existing online learning tools using elements of MOOCs and mobile learning have come up on the scene in recent times in the edtech sphere. These include initiatives like Classle, WizIQ, Simplilearn, Millionlights, Chalk Street and Vedantu to name a few.

While not at the 'massive' scale as some of the more popular international MOOCs, the first pilot course by the IITs on mooKIT was considered a relative success due to the significantly greater completion rates than the international MOOCs (Jordan 2014). On the other hand, 'blended MOOCs' have been offered through IIT BombayX where educators enrol in a MOOC and then use it in a blended format at their own institutions. It allows the highest level of quality content from the IIT to trickle down to the smaller institutions, replacing the need for highly trained faculty.

Review of Literature

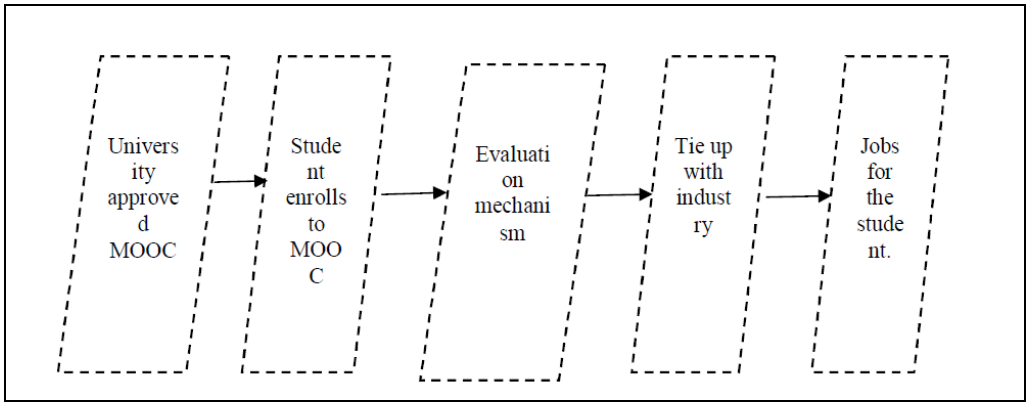
Ritimoni Bordoloi (2019) [7] In the industrial and techno-based era, MOOCs have emerged as one of the most potential tools for offering quality learning opportunities to the entire world. It is observed that country-wise, various national digital platforms have evolved as the fallouts of the explosion of knowledge and technology in both the developed and developing countries. In case of India too, it is observed that the policymakers and education providers seem to be emphasizing more on the implementation of online courses in virtual learning environment. But in the real sense, due to the variations and availability of adequate resources in different parts of the country, the outcome or the success rate of such online courses is yet to be fully assessed in India (Ritimoni Bordoloi, 2019) [7].

Rajwinder Kaur (2019) [6] MOOCs have been most hotly debated topics in education circles over a decade now with extremely polarizing opinions. Despite that the true value of MOOCs lies in their capacity to open up access to knowledge that previously was the preserve of a small elite. It offers an incredible and unique opportunity which otherwise would not have existed with formal modes of education. MOOCs are future of education particularly at tertiary level. (Rajwinder Kaur, 2019) [6]

Ambadkar (2020) [3] The introduction of Massive Open Online Courses (MOOCs) is one of the key drivers of technological innovation in education in India which enables thousands of learners to participate in these open and free courses simultaneously without any barriers of geographical boundaries. MOOCs are open, relatively free online courses which integrate methods like online learning, assignments, online discussions, use of open educational resources; video based learning into its delivery of course to its participants across the world. Although the MOOCs phenomena is not new to the world and to Indian participants as major MOOC providers like Coursera, Edx, Udemy, Futurelearn, Class2Go havealready been delivering MOOCs for a long time, Indian Government has launched its own indigenous MOOC platform SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) (Ambadkar, 2020) [3].

Challenges

A linear model can be opted for the implementation suggested by the author.



(Source: Puja Devgun. (2013). Prospects for Success of MOOC in Higher Education in India. International Journal of Information and Computation Technology, 641-646).

Fig 1: A Linear Implementation Model

The factors which pose as challenges required to be taken into consideration along with implementation.

- **University approved MOOC**

If universities need to be run, The Technical infrastructure needs to be upgraded in the universities. But when Ivy League colleges are providing MOOC's to student free of cost. Indian universities need to gear themselves up to meet the global standards.

- **Students enrolling to MOOC**

Awareness of MOOC's needs to be spread appropriately using the social media sites, blogs along with traditional methods.

- **Evaluation Mechanism**

MOOC's are student- focused. Apart from the peer study, student needs to be evaluated according to his knowledge obtained on the subject. A strong assessment mechanism needs to be built up to justify the course objectives.

- **Finances**

With the increase in the cost due to technical cost plus cost of including industry experts along with expert professors. The universities will be definitely burdened with the extra costs. Universities can either charge the prospective employer meeting their exact requirements or a small amount of fees can be charged from the large number of students can solve the problem.

- **Trainers**

IIM colleges plan to start providing the students study material required two months prior the commencement of the course. Students are expected to come prepared for the lectures. During the lectures, the focus will be on improving the decision making skills of the student and enhancing their practical knowledge. The concept of flip classrooms. "We expect to see more partnerships between MOOC providers and Indian universities wherein MOOC courses are integrated with existing Indian courses in a "flipped classroom" framework, for both on-campus as well as distance learning programmes," said Raj Chakrabarti, professor of systems engineering in Carnegie Mellon University. Trainers can enjoy the benefit of sharing information with vast number of students but it also poses a challenge to them for upgradation of their skills. It is a good option for a retired professor, who can share his experience with the upcoming generation. It enforces a constant pressure on the trainers to meet industry standards.

- **Student perspective**

The student centric nature of MOOC gives the learner an upper hand. But self learning cannot be done without self-motivation and dedication of the students. Coursera witnesses a major fall in the number of students those who enroll and those who complete the course. The model proposed by author provides solution. If MOOC courses are approved by the university, the rate of students dropping out of the courses will be reduced.

Research Methodology

The research paper deals with the analytical study of the mobile usage in the Indian context. The study mustered data from the published sources and primary sources.

Analysis and Interpretation of Primary Data

The primary data is collected from 50 sample faculty respondents based in the city of Bengaluru drawn from various colleges.

Table 1: Profile of the Respondents

Variables	Frequency	Percentage
Age in Years		
20-25	14	28
25-30	11	22
30-35	9	18
35-40	4	8
40-45	4	8
45 and above	8	16
Total	50	100
Gender		
Male	36	72
Female	14	28
Total	50	100
Highest Qualification		
Master's Degree	22	44
M.Phil	18	36
Doctoral Degree	10	20
Total	50	100
Institution You belong to		
State University	7	14
Central University	8	16
College	35	70
Total	50	100
Purpose of Training under MOOCs		
Placement	35	70
To gain Knowledge	7	14
Gaining Credit Points	8	16
Total	50	100
Duration of FDP Uundergone		
One-Week	31	62
Fifteen-Days	8	16
Others	11	22
Total	50	100

The data was collected from the teaching faculty working in various institutions, who have undergone the MOOCs on-line FDP programme are considered for the study. The age profile indicates that Fifty percent of the respondents are in the age group of 20-30 years. Eighteen percent of the respondents are in the age bracket of 30-35 years. The Gender composition indicates that majority of the respondents are male. The availability of the respondents during the survey was convenience based.

The qualification details of the respondents indicate that the representation across the identified Qualification is equally moderate. Doctoral Degree is possessed by 20% of the respondents. The institution details of the respondents indicate the overwhelming response from the teaching faculty from the colleges is 70%.

Seven-tenth of the respondents has undergone the MOOCs training for the purpose of Placement. 14% of the respondents have indicated the gaining of knowledge as the main motive and 16% of the respondents are intending to gain the credit points by the same. The duration for which the FDP programmes that the respondents have undergone is noted. 62% of the respondents have undergone a One-week programme and 16% of the respondents have undergone the fifteen-days programme.

Table 2: Awareness about MOOCs

Awareness about MOOCs					
Particulars	**To Great Extent**	**To Full Extent**	**To Moderate Extent**	**To a Small Extent**	**Not at all**
Access to Course Information	18(36)	12(24)	11(22)	6(12)	3(6)
Support Service to the Participants	17(34)	14(28)	12(24)	5(10)	2(4)
Meeting the Schedules set forth	19(38)	15(30)	11(22)	4(8)	1(2)
On-line availability of Materials	20(40)	12(24)	9(18)	6(12)	3(6)
Diverse and Novel Topics	23 (46)	17 (34)	6 (12)	3 (6)	1 (2)
Reason Behind Joining MOOCs					
Particulars	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
Affordability	17(34)	14(28)	11(22)	6(12)	2(4)
Convenience of Time	34(40)	15(30)	10(20)	4(8)	2(4)
Up gradation	19(38)	17(34)	9(18)	3(6)	2(4)
Virtual Training	21(42)	14(28)	8(16)	4(8)	3(6)
Validity of the certifications	22(44)	13(26)	10(20)	4(8)	1(2)
Content and Delivery					
Particulars	**Very Effective**	**Effective**	**Moderately Effective**	**Effective to Small Extent**	**Not Effective**
Quality of the course materials	18(36)	14(28)	10(20)	5(10)	3(6)
Quality of the Resource Person	21(42)	13(26)	11(22)	4(8)	1(2)
Assessment Mode	19(38)	12(24)	11(22)	6(12)	2(4)

The respondents were asked question about the level of awareness they hold about the MOOCs. The access to course information was strongly held by 36% of the respondents. 22% of the respondents held a moderate level of awareness. 14% of the respondents turn down the Support Service to the Participants. The MOOCs platform as such provides the meetings held online. Some schedule it in such a way that the participants can log in at their convenient time. The materials are made available in readable form to the participants. One-fourth of the respondents have felt that this is of great help to them. The MOOCs providing the exposure about the diverse topics is found by eighty percent of the respondents to be helpful.

The MOOCs provides the programmes that can be completed online. The cost, time and mobility constraints to the participants are not there. They can access it in the hand held devices, computers, laptops and the like. This is agreed upon by about two-third of the respondents. Only four percent of the respondents express strong disagreement with the up-gradation. Neutral opinion is expressed over the Virtual training by 16% of the respondents.

The content and delivery effectiveness to the respondents was posed for which the responses have been that the course materials as being an effective part of the training programme is upheld by 74% of the respondents. 22% of the respondents have expressed the moderate effectiveness of the resource persons. 12% of the respondents have expressed the assessment to be effective to a small extent.

Recommendations

Based on this review, we offer the following key recommendations:

- Promote blended learning opportunities that capitalize on the benefits of both massive and smaller models of online learning.
- Target dissemination of MOOCs as workforce training, or skills upgrading, with a focus on content that is relevant and easily transferable to other contexts, independent of credentials.
- Seek to develop innovative business models and partnerships for effective information and communication technologies–enabled workforce training.

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