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Dear authors,

Greetings!

We are pleased to inform you that your manuscript with the following details has been accepted for publication in the forthcoming issue of the Indian Journal of Educational Technology (IJET).

Title:- Deciphering The Reaction of M.Ed. Students Towards A MOOC Developed at The Institutional Level

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(Dr. Abhay Kumar)
Editor

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An Investigation into the key ingredients of Massive Open Online Course

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ABSTRACT

Due to the spread of the novel Coronavirus (COVID-19), many places around the world were facing partial or complete lockdowns Education sector was affected badly due to these lockdowns. To continue with the classes and to provide education to students without break Higher Educational Institutions (HEIs) started adapting the virtual platform to teach. One of these virtual learning mediums to teach and reach students is massive open online courses. Many of the universities adapted MOOCS for mainly two reasons: to increase the visibility of the institution in offering virtual educational opportunities to anyone who wants to participate; secondly, to drive student recruitment around the globe (Allen & Seaman 2014). As the MOOC has emerged as a wave and all institutions have started taking initiatives to develop their course, in the present paper author investigates what all major ingredients are used to make MOOC from scratch. The author after reviewing various literature came across three basic components viz. physical, educational, and evaluative. The majority of instructors make use of these ingredients to make their course successful and worthwhile. These ingredients are wide and open-ended. It means liberty is in hands of the instructors to choose what all to adopt and in how much proportion.

KEYWORDS- *Massive open online course, video lessons, assessment, discussion forum, instructor's role.*

INTRODUCTION

Due to the spread of the novel Coronavirus (COVID-19), many places around the world were facing partial or complete lockdown and education sector was affected badly due to these lockdowns. To continue with the classes and to provide education to students without break Higher Educational Institutions (HEIs) started adapting the virtual platform to teach. One of these virtual learning mediums to teach and reach students is massive open online courses. They are the new revolution that has changed the mode of education in the world. They are called 'massive', to the number of registered students, and 'open', because the course content is free of charge. They can be accessed online and they are courses since they have a specific structure with a definite material to be studied (Siemens, 2013).

MOOC, as the name suggests, is an online course that has enrollment in huge numbers and is conducted online on different platforms. Such courses are open for all irrespective of gender case age and location. Such courses receive an enormous response from students. MOOCs help students to form a community wherein students of all countries take part and share their learning. With MOOC the learning is now not only enclosed in four walls of a classroom. MOOCs are also famous because they provide us with a high-quality education from

renowned institutions around the globe for free. According to a report by class central, by the end of 2020, 16.3K MOOCs were to be announced or launched by around 950 universities worldwide. In 2020 alone, around 2.8K courses were added(Shah, 2020). The ongoing pandemic has increased interest in online education. MOOC providers, in particular, have all seen drastic growth, which reminds of the year 2012 which was called the year of the MOOC by the New York Times.

HISTORY

Massive open online courses laid its foundation on 2008. George Siemens, Stephen Downes, and David Cormier first started MOOC and it was called connectivism and connective knowledge MOOC. Although the term MOOC was coined by David cornier. The basic principle that is involved in MOOC is learning is a process and not a product that involves making connections and knowledge is the network here. In 2011, Sebastian Thrun and Peter Norvig from Stanford started an online course on the subject of Artificial Intelligence. They decided to invite anybody who wanted to learn. And to their surprise, they got an enormous response of around 1.7 lakh students. In April 2012 Daphne Koller and Andrew Ng, both Stanford colleagues involved in the Stanford MOOCs, started Coursera. In May, Harvard and MIT joined together to create the EdX platform. After that many Indian universities started taking initiatives in MOOC. As the MOOC has emerged as a wave and all institutions have started taking initiatives to develop their course in the present paper author investigates major component and their constituents that are used to make MOOC effective and attract learners. A successful online course includes a wide variety of online resources, video, audio materials, etc. Teachers should include also make use ofweb 2.0technologies and make a community of students who benefit the most from online learning. Most universities start MOOCs for two main reasons: first of all, to increase the visibility of the institution in offering virtual educational opportunities to anyone who wants to participate; secondly, to drive student recruitment around the globe (Allen & Seaman 2014). According to a study conducted by Pilli et al., (2018), accessibility, lifelong learning, and brand extensions are some of the strengths of MOOCs, whereas dropout rates, poor pedagogy, and low-quality assessments are major barriers to their effectiveness. Alternative education and collaborative learning are some of the outstanding opportunities MOOCs present, which worth the efforts to create more democratic and innovative higher education. Results indicated that it is worth exploring the ways to improve the completion rates, weak pedagogical structure, degree provision, quality insurance, and assessment as well as to discover the needs of a new generation in online learning.

CLASSIFICATION OF MOOCs

MOOCs can be classified as xMOOC and cMOOCs based upon the learning theory they follow. cMOOCs are broadly referred to as connectivist MOOCs or sometimes as Canadian MOOCs. Canadian researchers George Siemens, Stephen Downes, and Dave Cormier were Canadian and gave the concept of cMOOCs based upon the theory of connectivism. According to this theory, learning does not necessarily mean a transfer from student to teacher and does not occur in a single environment but proposed that knowledge is transferred through interactions with people in a web environment(kop,2011). In cMOOC,

individuals are responsible for their learning. xMOOCs are teacher-led MOOCs where an instructor provides video presentations to teach the course while each student follows their coursework at their learning speed (Mangelsdorf, 2012). Coursera, edX, Udacity, Udemy, Khan Academy, and Venture Lab are some examples of xMOOC. Students can take the course they wish to learn, watch lectures, complete assignments, participate in discussion forums, and go towards automatic grading assessments.

ENROLLMENTS IN MOOC

From many studies done in the past, it has been found that students enroll in MOOC for various reasons. Some students find MOOCs interesting and enroll to satisfy their learning craves. Students also enroll in MOOCs to gain certificates and get recognition or credit. It has also been found by some research that students enroll in the course to make social connections with other students. Students also enroll in MOOCs out of curiosity. MOOC help professional who is in a job to prepare for future job opportunities.

INGREDIENTS OF MOOC

Making a MOOC is a long process and a lot of effort and time is required. In this paper, the author after reviewing various literature and attending various online courses came across three basic components viz. physical, education, and evaluative that make online courses effective and operative.

Components	Ingredients
1. Physical	Choosing the right platform
	Title
	Description of the course
	Introductory video
	Welcome email
	Announcement
2. Educational	Video lessons
	Discussion forums
	Assessment
	Additional resources and activities
3. Evaluation	Proctored exams
	Feedback for the course
	Certificates and badges

Table-Key Ingredients of MOOC

All three components contain various ingredients that are open-ended and wide. It means liberty is in hands of the instructors to choose what all to adopt and what all to keep aside. The majority of instructors use all the below ingredients to make their course successful and

worthwhile. Having attended many MOOCs the author found that three basic components are there in MOOC which include different ingredients in it. The three phases are as follows

1. Physical components

Before a house is made the architect gives a blueprint of the house. Similarly, before a course begins the instructor need to prepare a blueprint. A solid blueprint will result in a long-lasting and effective course. Physical components are like the blueprint of the course. In the physical components, the various parts are

A. Choosing a platform

There are various platforms in the market in which some are free and some are paid. Instructors can based on their budget can choose a platform. Udemy, Audacity, Swayam, Coursera, EDx, Future learn, Learn dash are some platforms where instructors can develop a course. Learning management systems like google classroom, Schoology, Moodle, etc can also be used to prepare a MOOC

B. Title of the course

As an instructor, you have the freedom to select the topic of the course which can be appealing and catchy. This enables learners to join the course and create enthusiasm in them. Titles should be such which attracts the learners. It should be specific to the topic or course the instructor is interested in teaching.

C. Description

The description of the content should include all the details of the course. It mainly consists of the start and end date of the course. It should include the basics of the course like the course fees and the features in the course. Some courses also include the learning outcomes of the course and the course syllabus. The prerequisites of the course can also be mentioned whether it is for beginners or some skills are required to enter the course. It can also include the description of the course assessment and information of the proctored exam is taken. It can also include whether the certificate will be given at no cost or not. Description of the course can include registration requirements like educational qualification essential for the course. If the course is master's level then a bachelor's degree is a prerequisite etc. Some course is open to all and students use it just for learning and knowledge transfer.

D. Introductory video

When is course is being launched the instructors need to make a course video that will introduce the learner about the course and why the course will be beneficial to them. The course video can give a brief introduction to the instructors of the course.

E. Welcome email

When the students enter a course, they should feel welcoming and part of the course. The platform can send a welcome email to the registered learners before the course begins and welcome them to the community of online learners. This can result in motivation for learners to enroll in the course.

F. Announcement

As an instructor when you make a course you want to keep students updated about the course and keep them reminding about the course start date so that they don't miss any part. In this part, the announcement section is very important. This can be as an email or a chat platform or just a notification on their mobile from their MOOC platform.

2. Educational components

In this part of the course generally, the instructors include everything related to the course content or the topic which has been selected to make the MOOC. The instructor begins both video lessons, adds some formative assessment to it, some games, activities, and additional resources for students self-learning. Students also come across a forum called discussion forum where student's and teachers' student interaction takes place. Let's look into each component in detail;

A. Video lessons

The instructors prepare video lessons for the learners to understand the content. The videos are considered key components of the MOOC. Generally, instructors make use of 4 different types of video which include :

- Talking head video
- Live-action video
- Screen capture video
- Keynote or PowerPoint presentation video
- Open source videos

Students watch video lessons of the course to understand the content of the course. Videos sometimes also contain transcripts and activities in between. Students also have the facility of taking down notes while pausing the videos. Students can also download the videos and watch them later. According to Chauhan, et al.,(2015), video provides self-regulated and independent learning. It has transformed the traditional classrooms by replacing the "one-size-fits-all" approach with self-paced learning, and from curriculum/teacher-centric to student-centric learning. Duration and quality of the video are also important while making a video. According to an empirical study conducted by Guo, et.al.,(2014), shorter videos are with instructors talking heads are more engaging. High-class prerecorded videos are not engaging when chopped for a MOOC. Videos wherein instructors speak with enthusiasm and fast are more engaging.

B. Discussion forums

A discussion forum is an electronic space in MOOC wherein students discuss their experiences with each other. It is also a platform where students can learn from each other as well from others experiences. It's a space to share knowledge and also transfer. In discussion forums, students get an opportunity to start their threads or take part in a thread already created by the instructor or the other learners. The threads are the medium for the instructors to know where the students are facing challenges what where the course needs to be improvised. According to Persell (2004), as cited in Xia, et al.,(2013) the roles played by instructors and students in discussion forums can be categorized in this way.

- Starters: who ask questions, raising issues, and reflecting on teaching materials
- Responders: answering questions, posting new questions
- Facilitators: tutoring, introducing new learning sources, administrating

Hence, discussion forum helps the learners to initiate ideas, share content and collaborate with others. It gives a platform for the learners to play wide variety of roles.

Instructor roles in discussion forums

- Host: creating and managing the discussion forum
- Connector: connecting different threads, sources, students for synthesizing purpose
- Mirror: reflecting students' thoughts and raising questions.
- Technical supporter: technically supporting students to use online tools and resources
- Evaluator: assessing students' performance in a discussion forum

Hence students and instructors both play an important role in managing and functioning a successful forum. Onyema et al.,(2019) conducted a study on online discussion forums as a tool for interactive learning and communication. The study suggested prompt or timely feedback by teachers and administrators of online discussion forums. Grading of participation of students in online discussion forums and formulation of policies regarding the usage of the online discussion forum in schools.

C. Assessment

Assessment is an important component of MOOC. Platforms provide a variety of assessment facilities for students to check to assess their learning. It also helps other peers to take part in the evaluation process by making use of peer evaluation. Both formative and summative types of assessment are used in MOOC. The basic types of assessment found are.

Automatic graded weekly quizzes- most of them are multiple-choice questions testing the content knowledge of the course content. Such a method provides a good chance to assess any topic that you are not sure about.

Peer assessment – Open-ended questions are difficult for automatic grading; in such case a certain set of the rubric is given by the instructors to the learners to assess their peers. The rubrics guide student on how to add or subtract marks and evaluate an answer.

Self-assessment- MOOCs provide students with an opportunity to assess themselves while learning and to understand their strengths and weaknesses. Self-assessment was argued to be the most suitable assessment method to correspond to the needs of these self-regulated learners and a potential solution to the high attrition rates and the patriotic grading bias during peer-assessment. (Ventista,2018).

Falchikov (2007) argued that assessment, rather than teaching, has a major influence on students' learning. The paper argued in favor of the self-assessment as to the most effective and appropriate method of formative assessment when open-ended questions and essays in MOOCs are concerned.

D. Additional resources & activities

MOOC provides students with additional resources where students can learn extra about their course content. The resources include worksheets, exercises, quizzes, resource lists, e-books, pdfs, and handouts. Some instructors also allow students to download the PowerPoint presentation handouts for future references. Such supplementary materials help students to dive in through a variety of resources on a specific content topic and it also helps them to filter out the useful resources available on the internet which is authentic and valid for the course. Instructors should create materials that help students to apply what they are learning. The material should support and reinforce the video lessons. Always save the handouts, ebooks in pdf format for easy accessibility to the students. MOOCs also incorporate game-based learning and many researchers in past have shown the benefits of using games in education.

3. Evaluation components

As the course comes to an end the instructors come up with a survey to evaluate self on the platform used for the learning. To make the next lesson more engaging and resourceful a feedback at the end of the course is a must. This helps the instructors to find the strengths and weaknesses of the course. Following three are the basic ingredients of evaluative components

A. Proctored final exam

To secure a certificate student need to undergo a final exam which is mostly multiple-choice questions and objective types. Here the instructors make use of a webcam to keep a keen view on the student so that they don't use other materials and online resources while answering questions. Outsourcing is frequently employed in such kinds of exams by the institution or the instructors who develop the course.

B. Feedback

Learners should be allowed to evaluate the course to provide a more effective means of improving the course. This can be done in the form of small survey, interview or group discussions at the end of the course. Surveys can be given out at the end for the students to rate the course components. Instructors can, then, improve their course based upon their learner's feedback and reflect upon their journey as course instructors.

C. Certification and badges

Institution or instructors can create their certifications which students can then use to claim credits at other educational institutes. Kopp et al., (2017) stated that awarding certificates does have an impact on MOOC learners. As all students do not enroll to complete the course, some students only complete one or two units of course. So it becomes important to recognize their learning and so digital badges come into pictures which are given for successful completion of some parts of the course. So nowadays most MOOCs offer badges for completing either the entire course, of each unit or a week of work. Some MOOCs like Swayam and Coursera offer proctored exams for a fee, which will involve the earning of a certificate. MOOCs provide a statement of accomplishment for successful students, but here no college credits are associated with this type of certificate. Although certificates are provided for free some charge fees to get a verified certificate which can help in employability. Students can pay for the fees to show off skills on a resume or portfolio, ensure authenticity and value and sometimes gain possible access to additional services by paying.

CONCLUSION

Massive open online courses provide students around the world to enroll and gain knowledge irrespective of age and geographical border. Students get options to choose from a variety of courses and get themselves enrolled in courses from well-known institutions. For instructors to gain maximum learners in their course they need to keep themselves updated with all the above components and make their course enriching. Many learners join MOOCs for fun some out of curiosity and some to upgrade their knowledge so so it is important for the instructors to provide a variety of learning experiences according to the needs of the learners. Moreover, if instructors of the course will understand what are the essential course component, it will be helping themselves to succeed in their online course development. Every year thousands of students enroll for MOOC out of which many continue the course and many also drop out from the course. Those students who enroll in the course get to benefit a lot. Students get an opportunity to join an online community of students which is diverse and large. They come across a variety of resources online recommended by instructors around the world and become an expert with upgraded knowledge about the course content. Sometimes before enrolling in a university, getting to study that course online will help students know more about the course and how passionate they are about it. From learning how to bake a cake to how to be confident on-screen while making videos the world of MOOC is full of variety and resources. MOOC are also available on mobile and students can learn anything from anywhere around the world. Enrolling in MOOC makes learners part of the whole world. Learners get an opportunity to be part of something global and wide.

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Moocs In Teacher Education: An Examination of The Present and A Vision for The Future

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ABSTRACT

Massive Open Online Courses, or MOOCs for short, have emerged as a game-changer in the field of education. MOOCs make it possible for learners from a wide variety of backgrounds to gain access to low-cost information of a high standard. The course provides students with self-paced learning and learning at their own convenient time. People who are doing a job and lack time to study in physical mode can enroll in such courses and get the benefits of online learning. Though MOOC has gained momentum worldwide MOOCs in India are in their primary stage. Teacher education programs in India also aim to help teachers develop the professional habits and dispositions necessary to be successful in their careers, such as the ability to communicate effectively, work collaboratively with others, and continuously reflect on and improve their own teaching practices. MOOCs in teacher education can act as an important way of teaching where learner are more self-reliant and don't depend much on teachers to get information. The potential advantages that Massive Open Online Courses may have for the subject of teacher education are examined in this article. The study also examines the benefits of Massive Open Online Courses for the education of teachers,

including access to content of a high-quality, flexible learning alternatives, and chances for working together and networking.

Key words: Teacher education, MOOC, National Education Policy, opportunities, online education

Introduction

Information and communication technology (ICT) has changed how we educate ourselves and created new educational opportunities. ICT in education is the practise of utilising computers, software, and other digital tools to support teaching and learning. It can be used to support a range of educational activities, including delivering content, facilitating communication, providing feedback, and assessing student progress. One of the greatest changes brought about by the use of ICT in education is how students and teachers interact. It has allowed educators to create and deliver educational content to students in a variety of way. Today, we use computers, the internet, and other ICT tools to take education to places that were never possible before. It has enabled educators to reach students in remote and marginalised areas. Students residing in developing countries have used this technology to enrol to advanced educational courses.

As per National Educational Policy (2020), “India is a world leader in information and communication technologies as well as other cutting-edge fields. The Digital India Campaign is assisting in the transformation of India as a digitally enabled society with a knowledge economy. While education will be key in this transition, technology will be critical in improving educational procedures and outcomes; thus, the interaction between technology and education at all levels is bi-directional.” Leveraging technology in education has led to introduction of various methods of teaching including flipped classroom, blended learning, game-based learning and also online learning. Many higher education institutes have adopted this online learning by creating virtual classrooms. The cost-effective, flexible, and self-paced nature of online learning makes students to attend classrooms during their own free time, and they can also get an opportunity to interact with other students and faculties in a virtual mode. In comparison to face-to-face classrooms, online learning, according to research by the U.S. Department of Education, results in better learning outcomes for students. (Chakravarty, 2016). According to an online learning platfrom Coursera's, 2021 Impact Report, more than 20 million more people signed up for its courses in 2021, which is the same increase as was seen in the three years before to the pandemic. These increases are a result of the popularity

of online learning becoming more widespread around the world, which has led to an increase in the number of remote students enrolling in higher education programmes and students from rural populations (Wood,2022). One of the recent and most innovative evolution of online education is MOOC. They use online platforms to deliver instruction and allow students to interact with one another and the instructor. They have become an effective platform for reaching many people who would not otherwise have access to education. To improvise students' level of engagement and learning outcomes, the potential of MOOC is still being tested and tried.

Understanding Moocs

Massive Open Online Course is an abbreviation that stands for MOOC. The courses are massive because there is no limit on the enrolment of students in the course. It is considered open because anyone from anywhere with the internet can access it and it is online because all course components like instruction, testing, and discussions are done online. MOOCs are the emerging field in education that also encourages lifelong learning. Since MOOCs (Massive Open Online Courses) came out in the early 2010s, there has been a lot of research and writing about them. Some studies have looked at the effects and effectiveness of MOOCs, while others have looked at the motivations and experiences of MOOC learners, as well as the challenges and opportunities that MOOCs present for higher education institutions and teachers. Overall, what we know about MOOCs suggests that they can be a flexible and easy way to get a high-quality education, especially for people who may not be able to attend traditional on-campus programmes. MOOCs can also help develop new learning models and teaching methods. They can also help learners from different places and backgrounds work together and get involved.

But MOOCs have also had problems and been criticised for things like how long people stay in a course and how many of them finish, how good and consistent the course content is, and how few chances there are to talk to other people and get help. Some studies have also raised concerns about how MOOCs might affect traditional higher education and how well they can help people from different backgrounds and with different needs get the same access and opportunities.

Overall, the research on MOOCs suggests that these courses could have a big impact on education and learning, but it also shows how important it is to keep researching and thinking about the challenges and opportunities that MOOCs present.

Moocs in Teacher Education

NCFTE (2009) asserts that a teacher should be a special kind of person who does not take information for granted, who is integrated in the curriculum and accepted without inquiry, who does not see pupils as passive recipients of knowledge but rather as capable creators of their own knowledge. A person who actively resists rote learning makes learning a fun and engaging activity, plans projects, discussions, discourse, observations, and visits, and combines academic learning with useful activities. Hence, a teacher educator or a student-teacher educator whose purpose is to prepare such teachers, should share the underlying educational philosophy and possess the needed understanding and professional competencies to develop such teachers. It can only be possible with a proper blend of traditional wisdom of teaching-learning pedagogy with the modern modes of technology.

The majority of people believe that student-teacher educators are individuals who want to work as classroom teachers, however this is only one of the many job options that are made possible by this degree. Social work, educational specialists for museums and community parks, curriculum sales, education policy development, private school consultation, corporate training, and writing SEO content for business websites are just a few of the job markets where a candidate with a Master's in Education may find employment. Employers are searching for leaders with a master's in education who can push people to achieve greater success, effectively communicate, accommodate diversity, and adapt to change. With a master's in education, one can work in a variety of positions. Therefore, it is the responsibility of an educationist to develop the M.Ed. programme in a way that not only produces academicians but also unlocks the key to any professional door and provides the market with the qualified people resources it needs (Gawarikar & Pramanik, 2015).

MOOC is an online mode of learning that will enable student-teacher educators to make learning participatory, and joyful, making their learning more productive. MOOCs are not just tools to teach students; they are also being used to educate teachers, provide various learning experiences and meet their various learning needs. MOOC also has a promising future in its application to teacher professional development and it will promote the reforms in teacher education to some extent (Inchiparamban, 2017). The researcher conducted the study to update the student-teacher educators on the use and adaptability of MOOCs for the proficiency in research methodology, to create awareness among them on MOOCs as a mode

of teaching-learning, and to break the traditional barriers in the process of teaching-learning. This study will introduce them to an alternate mode of learning and equip them with skills for online learning. and may in turn motivate the student-teacher educators to make a MOOC for meaningful learning in their future classrooms.

Present Status of Moocs in Teacher Education

Teacher education is an important discipline to improve the quality of school education. According to Goel & Goel (2012), *“Teacher Education is a discipline which educates the progressive generations on what has gone by, where we are, where we want to go, and what we like to create, observing healthy, meaningful and long life. Innovations in Teacher Education are very rare. It may be attributed to various factors. Novel ideas do not incubate because of adverse external conditions. There are wide gaps between the visionaries and actors. So, very often the innovations have a short life and die down in the institutions, where these originate. Sometimes, the most innovative programs fail in the formal system, because, these are beyond the view & purview of the apex bodies.”* Teacher education programs largely follow traditional methods of teaching and infusion of modernization is also very slow. The programs are always novice to new modes of teaching In India, teacher educators are reluctant in adopting or experimenting with innovative teaching approaches. It's crucial to remember that teaching isn't a field that's known for creativity, so change can be tough. As science and technology are advancing in India, the methods of teaching are also not confined to chalk and talk method but moving more towards method which focuses on the need of students. But the outlook of teachers towards adopting such innovative approaches to teaching is a big challenge (Parvin, 2021).

MOOCs have brought a disruption in the education sector and all sections of society are adopting this method of teaching. Massive Open Online Courses can provide a new avenue for teaching teachers to use educational technology in classrooms. Singh and Chauhan (2017) investigated 156 teacher educators' awareness of MOOCs across sub-categories such as concept awareness, usability, technology, current practices, and policy guidelines in a study. According to the findings, teacher educators have a fundamental understanding of MOOCs, including their strengths, delivery methods, and advantages. However, there is some confusion about MOOCs' importance in teacher education. Indian MOOC projects such as SWAYAM are still poorly understood. According to the findings, there is a growing demand for teacher educators to not only have a better understanding of MOOCs but also to give them

the resources they need to create and incorporate MOOCs into their regular classroom practices. The teacher education program should prepare students to use new technology in the classroom to meet the needs and aspirations of students in the twenty-first century. To fulfil these educational demands of students, we require teachers who know how to deliver knowledge and who truly care about students and their future success.

MOOCs: OPPORTUNITIES FOR FUTURE

The Indian government recognizes the value of MOOCs in promoting entrepreneurship, education, and training, and has set aside funds in its budget to support the creation of more MOOCs. The government's recent initiatives to provide quality education for people at all levels will be dependent on the expansion of online learning. According to Puspanadham, (2019) “with a smartphone penetration rate of 21.3 percent, India is one of the most vibrant smartphone markets in Asia-Pacific. JIO-Reliance, a 4G internet provider with low costs, was introduced in 2016. MOOCs are one of the most potential platforms for improving the condition of education in India, with high and increasing smartphone usage, affordable smartphone internet, and many MOOCs easily accessible via smartphones.” To increase the enrolment in teacher education in India and to provide quality world-class education to all, MOOC can be a significant option.

Massive Open Online Courses (MOOCs) are increasingly being incorporated into the global educational system due to the youth's growing desire to pursue high-quality education at reasonable costs and the importance that governments and educational institutions around the world place on e-learning and digital literacy (Subrahmanyam & Swathi, 2017). Additionally, the national education policy seeks to boost the gross enrolment ratio in higher education, including vocational education, from 26.3% in 2018 to 50% in 2035 (NEP, 2020). Although MOOCs are widely used in IITs, IIMs, and several top-tier private colleges, MOOCs are poorly known in Indian universities in Tier-1 and Tier-2 towns. While the vast majority of poll respondents claimed they were familiar with online education in general, only 22% said they were familiar with MOOCs, and only 4% said they were extremely familiar (Kaur, 2019).

MOOCs in the future will create an efficient environment for providing online educational needs. Higher education institutes should offer MOOCs in the future for boosting the reputation of the organization as an innovative institute as well as to promote academic debate in the universities concerning the mode of instruction, pedagogy, and in-classroom teaching (Haywood & Macleod, 2015). Institutions should also offer MOOC for the

following reasons:

- To make education inclusive for all
- To provide an alternate platform to learn variety of content
- To promote professional development among teacher and educators
- To make learning interesting and also activity based
- To make students enjoy the process of learning with technology
- To make customize course available to its students
- To promote global citizenship through foreign participation the course
- To teach students and promote ICT skills
- To make context specific videos available to students
- To be at par with the modern technology
- Increase the visibility of the institutions
- To make education available at less or no cost to all

Institutions provide MOOCs for a variety of objectives, such as brand extension, innovation, and access to education (Educause,2012). Higher education institutes offering MOOCs can have multiple benefits. By becoming a leader in innovation, institutes will get an opportunity to collaborate with various third part firms working in this field. Students' enrolment in institutes can increase and teachers in class will get various modes to adapt to. Teachers need to adopt MOOCs for stimulating fun and engagement among them, providing students with various modes of learning and also for their academic growth. MOOC showed an exponential growth during covid-19 also students at all levels enrolled in MOOC courses for variety of reasons and numerous skills. Potential of such course also needs to be tried and tested at professional course like teacher education and with this objective the following research study was adopted.

CONCLUSION

Massive Open Online Courses (MOOCs) have gained popularity during the past several years and are transforming the traditional approach to teacher education. MOOCs offer numerous benefits for teachers, including access to high-quality education from top-rated universities and educational institutions around the world. Regardless of a teacher's geographical location or financial situation, they can access education to enhance their skills and acquire new knowledge. MOOCs offer flexibility and convenience. Teachers can learn at their own pace and schedule, which allows them to balance personal and professional commitments. This

flexibility also allows teachers to tailor their learning to their individual needs and interests, which allows them to focus on areas they need to improve upon. MOOCs are cost-effective. Traditional teacher education courses can be expensive, but MOOCs are generally free or come at a minimal cost. This cost-effectiveness means that more teachers can access education and improve their skills and knowledge. MOOCs have transformed the traditional approach to teacher education, making it more accessible, flexible, and cost-effective. MOOCs offer a diverse range of courses, covering a broad range of subjects, allowing teachers to acquire new skills and knowledge in various areas. MOOCs also provide an interactive learning environment that encourages teachers to collaborate, exchange ideas, and engage in meaningful discussions. Therefore, it is essential for teachers to take advantage of MOOCs and continually improve their skills and knowledge to better serve their students.

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**Towards Excellence**UGC-HUMAN RESOURCE DEVELOPMENT CENTRE
Gujarat University, Ahmedabad-380009, Gujarat, India**CREATING A MOOC IN TEACHER EDUCATION– TEN STEPS
ACTION PLAN****Ms. Shama P. Ansari****Prof. Ashutosh Biswal****Abstract**

MOOCs began as an online education experiment to benefit from technology in Education. They were created for those who couldn't get traditional education for a variety of reasons, including living in rural places or working full-time and being unable to commute to campus regularly. Many people now use MOOCs for personal or professional development. They are accessible from any device with a reliable internet connection. National Education Policy 2020 also emphasizes the significance of exploiting technology's benefits while also addressing its hazards and perils. It encourages well-designed and adequately sized pilot projects to discover how to maximize the benefits of digital education while also addressing or decreasing its drawbacks. Pilot studies for online education, online teaching platforms, and tools, content production and dissemination, bridging the digital divide, virtual labs, teacher training and incentives, online evaluation, blended learning models, and other initiatives are recommended by the policy. The objective of the present study is to list the steps that can be followed by an instructor while designing an effective MOOC in teacher education.

Keywords: MOOC, research methodology, NEP 2020, video lessons, instructor.

INTRODUCTION

Today, technology is present in practically every facet of life, including schooling. Education has become much more accessible as a result of technological advancements. Books were scarce in the past, and educational possibilities were limited to a select few. Individuals had to travel to educational institutions to receive an education. Huge volumes of data are now accessible via the Internet, and formal learning options are at one's fingertips. Because of technological advancements, today's learning chances are vast. MOOCs have become a popular kind of online learning. It is still being tested to increase the quality of engagement and learning outcomes for huge groups of students without boundaries. MOOCs provide an unprecedented opportunity to put high-quality education in the hands of every learner. MOOCs have the potential to assist in revolutionizing our education system and satisfy the goals of equity, excellence, expansion, and employability if they are formally integrated (National educational policy, 2020).

MOOC is an acronym that stands for Massive Open Online Course. It is enormous because a massive number of students can enroll at the same time. It is open because anybody from anywhere can enroll, and it is online since all instruction, assessment, and conversations take place over the Internet. MOOCs are the newest approach in education. It also encourages lifelong learning (Trajkovic et al, 2016).

MOOC ACROSS THE GLOBE

Coursera, EdX, FutureLearn, Khan Academy, Miriadax, Open2Study, Udacity, MOODLE, and Udemy are just a few examples of technology platforms that can be used to host, manage, and deliver MOOCs. The most popular platform is Coursera, which accounts for 36% of all course enrollments (Shah, 2018). A MOOC can be hosted on one of three platforms. The first is a situation in which a company has its technology infrastructure. This has a hefty up-front cost, but it gives you complete access to and control over all of the technologies you're using. The second option is to stick to proprietary platforms, which usually entails signing a contract with the creators. The third option is to use platforms that allow the creator to distribute the courses for free (Pernas Peco & Lujan-Mora, 2013). However, any educational institution can become a MOOC provider if it develops a technology framework to support the courses or employs open-source software.

SITUATING MOOCs IN TEACHER EDUCATION

MOOCs have come as a tsunami in higher education. Around twenty to twenty-six million children are born each year in India, an estimated seven hundred million to 1.3 billion Indian youngsters will demand higher education in the next 35-50 years (Kumar, 2018). India's defining challenge and opportunity for the twenty-first century is to provide exceptional higher education while also preparing students for their future livelihoods and vocations. Unconventional modes of learning, such as open learning, on-demand learning, and other self-paced models of learning, should be adopted and used. According to a position paper published by NCERT in 2006, "For today's youth, flexible systems, futuristic curricula, and a twenty-first-century vocational orientation have become a requirement. It is critical to persuade the educational system, which has a key role to play in engineering the teaching-learning scenario and making it a more meaningful experience for both teachers and students." MOOCs are a solution to all of these issues, as they can deliver education to any large group of people. MOOCs can offer students better and more diversified instruction than individual professors would be able to supply (Daniel 2012). Developing a good understanding of MOOCs among teacher educators, as well as providing them with resources to build and incorporate MOOCs into their regular classroom practices, is a pressing necessity. According to Chauhan(2017) in most cases, the lecture approach is used in the classroom, although lecturers occasionally use ICT components such as films, PowerPoint presentations, or audio to teach pupils. Students are frequently unaware of MOOCs courses accessible on numerous platforms, nor are they informed about them by their lecturers. To reduce the dropout rate, efforts should be made to maximize learner engagement, evaluate their progress, and make learning entertaining.

STEPS INVOLVED IN DESIGNING A MOOC

Various MOOC models exist in the world, which includes xMOOC (extended MOOC) and cMOOC (Connective MOOC). MOOC models although keep on changing and various features are added simultaneously, the basic steps in designing a MOOC remains same. In the present study, a action plan to design and develop an xMOOC model has been discussed. Below is the description of some general steps that can be kept in mind, while designing a MOOC course . These steps will act as a guide for development of MOOC to any teacher educator:

1. Identify the topics for teaching online

The instructor should choose topics that will benefit them professionally or that will allow them to continue learning throughout their lives. Instructors can also use Google Trends, a useful search website that illustrates the frequency with which a certain search phrase is put into Google's search engine concerning the site's total search volume over time. To compare term search volume and locate its demand, utilize Google Trends. The search volume index and geographic information on search engine users are included in Google Trends.

2. Identify the platform

The platforms are used to host a MOOC. These platforms are called as content management system) (CMS0 or learner managements system(LMS). Various open source platforms are available online on the web. Out of all the platforms word press is an essential CMS which is free of cost and easy to manage. The investigator developed a course on the WordPress platform. WordPress is an open-source web development platform, or a piece of software, designed to make creating and editing your websites as simple as possible. The biggest advantage of utilizing the WordPress platform is that instructor don't need any technical knowledge to publish the material. Although instructors can also use Moodle, Udemy, Eduflow, etc to develop their course.

3. Give a name to your platform

Every course developed should decide on giving a name which should be formal, catchy and appealing to the students, It should also be something which attracts more students to access the course and enrol in the same. The name should be relevant to topics in the course.

4. Develop pages in the platform wherein you have information about :

- a. Syllabus: it should be a detailed syllabus mentioning the details about, medium of instructions, learning outcomes, Course start and end date, duration etc

- Instructor information: all the instructors who took part in teaching the course should be named here. Also, the instructor's biodata can be added to this section.
- Content map- It is mainly a map of all the content that is present in the course. Students get an idea about how the course contents are arranged.
- Target group: All those who are eligible to enroll in the course can be mentioned here. Along with that also mention any kind of prerequisites of this course.
- Queries – If the platform user has any queries they can mention them here.
- Content checklist: It is a document that lists all the lessons in the course. So a student can download and use it for making a tick off all the lessons that are completed, it is like more of a checklist for students.

5. Creating the e-content. Divide the e-content into:

- Pre-course survey - Before the MOOC were also made to fill up a pre-course survey to know their motivation and demographic profile before enrolling in the course.
- Video & interactive videos: These are important component when a instructor develops a MOOC. Videos can be made by the instructor or use videos available on the internet which are under creative common license.
- Additional resources- They are pdf materials or website links for additional reading related to the topics taught.
- Games/activities- Upload games to make the course engaging and fun for students.
- Discussion forum- Here a topic can be created by students or instructors, wherein students discuss and instructor can act as a moderator to take the discussion in right pathway.
- Assessment – Formative and summative , both should be designed to include in the course to know learning of the students and determine the effectiveness of the course.
- Badges/certificates- At the end of the course to give certificates to learners for completing the course successfully. Also providing them with badges (like stars given by teachers in test papers) after each lesson to keep them motivated during the course.

6. Assemble the e-content into:

- Modules- The content to be taught is divided into modules. They consist of various lessons in them.
- Lesson- It consists of e-content in form of videos, podcasts, activities, website links, and assessments.

7. Develop a section to collect feedback or rating for your course:

Feedback is essential in any learning process, for both teachers and pupils. Instructors need your feedback to improve their teaching. A reaction or piece of information that

arises as a result of an individual's or group's actions or behavior is known as feedback. Both positive and negative comments are critical in a Learning & Development setting. Feedback encourages learners to be more engaged and interactive, and it helps them to take control of their learning. Effective feedback informs learners about their present level of performance and what they need to do to improve.

8. Develop a manual and a video tutorial on how to use the course:

Manual is a very important component of a massive open online course. It acts as a guide to students on how to use the course and how to navigate the course. A user manual, often known as an instruction manual, is a critical document that assists your students in rapidly becoming familiar with the course, or in resolving a problem once they have it.

9. Develop a brochure for distribution:

To advertise for your course and make it available to a huge audience its also important to make a brochure. The brochure should contain details about the course, target groups, learning outcomes of the course, etc

10. 24*7 Technical assistance on the platform or through the WhatsApp chat facility:

As students are learning in traditional classes for ages and all of a sudden universities move to online instructions, it becomes vital that they will need an assistant at all times from someone from the course developers. So it's important for the course to have a chat facility embedded in the platform or to make a WhatsApp group for all registered students in the course so that technical assistance is available to them at all times.

Hence all the steps listed above will not only provide a road map to instructors to design a MOOC but also help them guide them in making their course effective while teaching online.

IMPLICATIONS

The administration of teacher education institutes must provide relevant support in form of technical devices so that MOOCs can be integrated into teaching-learning effectively. All the higher educational institutions should promote the integration of MOOC courses in their syllabus. Students should be allowed to learn through MOOCs available online and credits should be accommodated in their studies. All the teacher educators must be encouraged to develop MOOC courses for their personal and professional growth. Teacher educators should explore different platforms available on the internet to make MOOC courses and also for implementation in the classroom. Teacher educators should also try to bring awareness among their learners about such courses available online.

CONCLUSION

MOOC provide teachers with a lot of opportunities to learn and grow in their profession. It has helped many teachers to improve their practice. They have gained knowledge on how to better teach students and how to use new technologies in the classroom. MOOCs are not just for the current generation of educators, they can also be used for lifelong learning. The lesson in the modules consists of videos, podcasts, activities, and website educators who want to keep up with changes in education. MOOCs are courses that are easily accessible open to all and in most cases free to attend. Integrating MOOCs in teacher education programs will promote online learning among students and also lead to increased awareness among them about such platforms. MOOCs are being explored a lot in higher education and teacher education is not behind. Many people who live in a remote areas in India and also are having financial, or commute problems can be benefitted from such courses. All the teacher educators should be promoted to develop more such courses and make them available to students for enhancing their learning experiences.

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