

MOOC-Based In-Service Training for the Professional Development of Teachers in India

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Abstract

The education system in India is pervasive, with 95 lakh teachers, 14.89 lakh schools, and 26 crores of students (UDISEI 2021-22). Lockdown during the COVID-19 epidemic resulted in a disruption to education that has never been seen. The government initiates NISHTHA training through MOOC for government teachers on the DIKSHA platform. A survey was conducted with the help of a questionnaire and group interviews at the end of the scheduled training for government teachers in Haryana using non-probability sampling to explore the learner's experience and challenges to suggest improvements. According to the findings of the study, educators are in support of the effort, and they hope that similar actions will be conducted in the future. Challenges like low internet connectivity and restricted ways of communication were mentioned, and to improve the overall quality of the training, several instructors recommend using a blended approach for in-service training for teachers.

Keywords: MOOC (Massive Open Online Course), In-service training, Professional Development, Teacher

Introduction

Teachers have a crucial role in nation-building by producing high-quality human resources in their classrooms; as the NEP 2020 emphasises, "Teachers truly shape the future of our children and, therefore, the future of our nation." The National Education Policy (NEP) 2020, recognizes teachers as essential participants in the education process and emphasizes the necessity of their recruitment, ongoing professional development, favourable working conditions, and satisfactory terms of service.

UNESCO launched the "State of the Education Report (SOER) for India: No Teacher No Class" in 2021 which aims to serve as a reference for enhancing the implementation of the NEP and towards the realization of the "Sustainable

Development Goal (SDG) 4 target 4c - Increase the supply of qualified teachers in developing countries."

In-Service Training of Teachers and Its Need

A teacher's in-service education consists of any appropriate coursework or professional development activities in which he or she may engage while employed. It includes all training and education programs that are provided to a teacher while they are actively engaged in instructing students.

Billing (1976) defines in-service education as staff development, which is "a deliberate and continuous process involving the identification and discussion of present and anticipated needs of individual staff for their job satisfaction and career prospects

and of the institution for supporting its academic work and plans, and implementation of programs of staff activities designed for the satisfaction of these needs.”

When it comes to education these days, the goal isn't just to impart knowledge; rather, it's to help students develop the ability to navigate an increasingly complex, unpredictable, and uncertain world. Since Google already knows everything, society no longer recognizes students for their knowledge alone; instead, it recognizes their ability to apply that knowledge. Today's teachers are tasked with fostering students' sense of self-awareness and their ability to work together and independently. Teachers are needed to have an in-depth understanding of the subject matter they teach the students to help them learn more effectively. To do this, teachers need specialized knowledge, such as understanding a discipline, curriculum, and how students learn. Additionally, teachers need to be knowledgeable about the professional practice to create a learning environment that leads to positive outcomes. Teachers' ability to learn and grow as lifelong learners and career aspirants needs to be enhanced by emphasizing their inquiry and research skills. It's unlikely that pupils will become lifelong learners if they don't see their teachers doing it so in-service training is a necessity for teachers.

To a large extent, schools place their faith in their educators. So, in-service education refers to post-graduate opportunities for educators to continue developing their expertise and passion for their field. The purpose of this type of training is to help a teacher who is already working in the field overcome whatever shortcomings they have in her professional abilities. It's a valid argument that the skills that were relevant a generation ago may not be adequate in preparing today's students

for life after graduation. Today's students are expected to approach their daily tasks with more originality and consideration.

The goal of in-service training programs is to improve the school system's and the education industry's overall pool of qualified personnel. Teachers need training in new skills and contemporary methods if they are to fulfil their roles successfully and efficiently in the classroom. A country's educational standard rises with the average degree of education attained by its teachers. To keep up with the demands of the global economy's education system, it is crucial to provide high-quality in-service training for educators.

In-service training provides an opportunity to keep up with the latest trends and developments in the field, and a technique for teachers to improve their teaching and students' learning, ultimately leading to more productivity on the job. Teachers need professional development to keep up with the rapid pace of change in the educational system. In-service training is helpful for teachers to be able to put what they've learned into practice in the classroom. (Omar, 2014)

In-service training is essential to improve teachers' productivity and morale on the job. The “missing gaps” between expectations and student performance can't be closed without teacher development which is stunted without in-service training. Training and education can be provided to employees at any point of their employment, from hiring to retirement, through in-service education activities such as lectures, workshops, exhibitions, conferences, seminars, lectures, exhibitions, etc. (Osamwonyi, 2016)

Significance of Research

The most ambitious NISHTHA integrated training, which was supposed to be

delivered in person to 42 lakh teachers of the government school from Classes 1 to 8, has come to a halt. This training was planned for participants from all States and UTs of India. In a country like India, where there is a tremendous cultural, geographical, and linguistic variation, time-bound scaling and reach of such training is still a difficulty. However, the learning continuum that teachers and students share cannot be constrained owing to a lack of readiness to face the lockdown, nor can it be constrained due to the diversity and large population. Every educator should make it a priority to enhance their pedagogical competencies to better handle the needs of their diverse student population. The COVID-19 pandemic has also revealed the fragility and uncertainty of the teaching community. To reach every single teacher, pupil-teacher, and student regardless of the board, affiliation, etc., the Ministry of Education, Government of India has planned to organize a series of online courses for these stakeholders through the DIKSHA portal and to extend its reach to teachers working in elementary schools, as well other stakeholders. The training programs for educators were introduced one after another and carried out in batches. The DIKSHA portal was utilized so that MOOCs can be used for in-service teacher training in Haryana efficiently. This project of MOOCs for teacher training was used for continuous learning during the COVID lockdown and for reaching every teacher in a time-bound manner by scaling up. Additionally, this may offer equitable access to professional development opportunities for educators. This Research was needed to determine the impact of in-service teacher education using the MOOC model to explore the teacher's experiences and provide suggestions to cater to the challenges faced by teachers during MOOC-based in-service training.

Objectives

1. To find teachers' perspectives about MOOC for in-service Training.
2. To find the problems faced by teachers while attending MOOC-based in-service training."
3. To explore the suggestions to improve the MOOC-based in-service training for teachers' professional development.

Research Questions

1. Is it helpful to use MOOC for in-service Training?
2. How MOOC was helpful for teacher training during COVID-19?
3. How satisfied and confident are the primary and secondary teachers in training online through MOOC?
4. What is the difference between MOOC-based training with traditional offline teacher training mode?

Research Methodology

The survey approach is highly versatile for collecting information. The study employed a descriptive methodology and utilized a qualitative survey. The research inquiries included in the survey have been specifically designed to align with the primary objectives and scope of the study.

Sample

The survey of 330 samples of government school teachers was conducted using Probability sampling techniques. A convenience sampling method was employed, and Samples included government school teachers of Haryana who are interested in being

part of the research. Data has been collected from 3 districts of Haryana-

Rohtak, Jhajjar, and Sonipat. 110 Samples were taken from each district.

Table-1: Sample distribution with their designation

Designation	Number of Participants
Primary Teacher (PRT)	188
Trained Graduate Teacher (TGT)	142
TOTAL	330

Table-2: Age-wise distribution of Samples

Age	Number of Participants
Less than and equals 30	89
31-40	172
41-50	40
More than and equals 51	29
Total	330

Tool

The data has been collected using a self-made structured questionnaire comprising questions relating to teachers’ experience with their in-service training through MOOC on the DIKSHA platform. Questions include closed-type questions using Google Forum and open-ended discussions were used while conducting group interviews to understand their experience better.

Limitations of the Study

A limited number of the population (Haryana Government school teachers) participated as samples in this study so there is a chance that private teachers may have different opinions. Because of the COVID-19 epidemic aftereffects, a limited number of the population available were interested in answering the survey due to which restrictions were imposed on the researcher to collect samples across the State. The

survey included participants who attended MOOC training on the DIKSHA platform which is a government-initiated national-level platform so there are chances that the experience can differ from the international MOOC platforms.

Literature Review

MOOCs are emerging educational technology for training and innovation. They have become distance education methods in response to the COVID-19 pandemic’s new challenges, changes, and crises. (Pérez et al. 2022) In an online survey of students enrolled in at least one of the “University of Pennsylvania” 32 MOOCs offered on Coursera, Christensen et al. (2013) found that 44 per cent of respondents stated “Gain specific skills to do my job better” as reasons for studying, adding to the growing body of evidence indicating workers are using MOOCs for their self-directed learning. Therefore, MOOCs

appear to play a pivotal role in the future education of knowledge workers.

Gonçalves et al. (2016), present a case study of the development and implementation of a MOOC to attract instructors to this new method of knowledge sharing. The analysis of the questionnaires reveals that the participants viewed the MOOC as a scientifically sound training course that has significantly contributed to their ongoing education. The study found that MOOCs can facilitate educators' access to education, eroding space barriers at a time when educators must be empowered for the 21st-century teaching and learning process. MOOCs can be effectively integrated into formal teacher training programs, with participants reporting high satisfaction and perceived value for their professional growth.

Research by Salmon et al. (2015) used a questionnaire on the use of MOOCs for professional development in education which was completed by an anonymous 155 participants. The research finds that massive open online courses (MOOCs) have the potential to give professors the professional development they need to improve their classroom techniques.

Taranto et al. (2021) investigate the impact of a MOOC on outdoor mathematics on the professional development of participating instructors. The study analyses the learning progress of 19 selected case studies from different nations and learning levels using their pre- and post-questionnaire answers and posts on a specific communication message board. The findings indicate that the examined teachers have benefited from professional development, as evidenced by the expansion/evolution of their content, pedagogical, and technological knowledge.

Alberto (2023) has shown that MOOCs can effectively address the need for

continuous training in teaching skills, providing teachers with the necessary tools and resources to enhance their pedagogical practices. Padmavathy, 2023; and Smyrnova-Trybulska, 2022 accepted that institutions can promote excellence in education by integrating MOOC into teacher preparation programs. This improves both, teacher practices and student outcomes.

Carvalho et al. (2023) recognised that MOOC-based training programs can significantly enhance teachers' competencies particularly in adopting innovative teaching and improving digital literacy for online teaching-learning platforms. However, Jobe et al. (2014). Pointed out several challenges in implementing MOOCs for professional development. These include time constraints, difficulty integrating MOOC schedules into existing work commitments, and low completion rates. Additionally, employers may be reluctant to accept MOOC accreditation as equivalent to traditional professional development. To maximize engagement and course completion, careful consideration of MOOC design criteria and principles is necessary. Despite these MOOCs offer a scalable and sustainable approach to teacher education, potentially enhancing the quality of teaching and learning in various educational contexts (B. Oyo et al., 2017).

Result

"Is it helpful to use MOOC for in-service training?"

A lot of different things can affect how productive education systems can be in different parts of the world. The most fundamental components that determine the overall quality of education on a local or global scale are our teacher training programs. Teachers are required to keep themselves informed about innovations

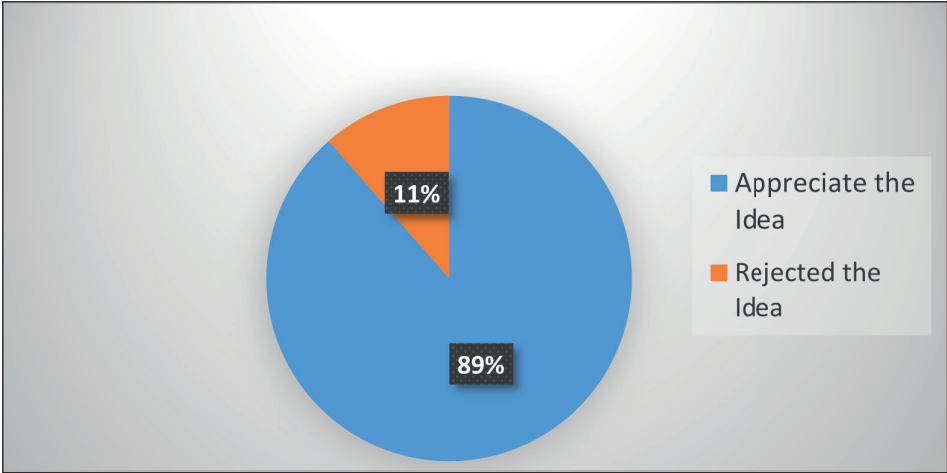
in pedagogy and technology. In addition, it is anticipated that the pupils will be guided based on the evolving educational requirements.

MOOCs are a great way to learn something new or expand the existing body of information and knowledge. Hence, educators can broaden their perspective on the role of technology in education.

Table-3: Teacher’s perspective on using MOOC for in-service training

Appreciate the Idea	294
Rejected the Idea	38

Figure-1: Teacher’s perspective on using MOOC for in-service training



Participants mentioned that during COVID online training seems to be the only option and MOOC is not only a viable option but a requirement of the time. About 89 per cent of participants appreciate the idea of using MOOCs for their in-service training but 38 per cent

of participants rejected the idea and mentioned the challenges they faced while using MOOCs for training. Almost all the participants aged 50 and more rejected the idea and mentioned their inability to use the technology properly.

Table-4: Reason mentioned by participants for joining MOOC

Reason for joining MOOC	Number of participants
To get Certificate	297
For Subject Knowledge	214
Curiosity	175
Interest	82
Technical Enhancement	155

All the participants mentioned that the first and foremost reason to join in-service NISHTHA teacher’s training

through MOOC on the DIKSHA platform was that it was instructed by the Government authority (NCERT) and also

provided them with a proper schedule. District and school authorities were considered responsible for ensuring teachers' participation and training completion. Most of them mentioned that after getting familiar with the MOOC platform, they started exploring different courses, and about 63 per cent of participants explored MOOC willingly. Most of them joined about 4 to 8 MOOCs on average but some participants joined more than 25 courses just to explore which shows that participants found the MOOC interesting which forced them to explore other courses that they were not compelled to join by authorities.

Participants have different reasons for joining MOOC-based training. More than 90 per cent of participants mentioned that they attend MOOC to get a certificate as they must submit it to the authorities as proof of the completion of the courses instructed but 25 per cent among them also mentioned that they like to get the certificate as it gives them a sense of accomplishment. Eighty-seven per cent of participants mentioned that they completed the MOOC and acquired the certificate. About 53 per cent of participants mentioned that they participated in a lot of MOOCs just to explore their content and satisfy their curiosity.

Sixty-five per cent of the people who took part in the survey indicated that they enrol in MOOCs to improve their overall level of subject knowledge (Batchelor & Lautenbach, 2015), and especially to gain an understanding of how they might be able to improve their teaching while they are leading their subject-related classes. They noted that it was beneficial for them to learn which strategy would assist teachers in connecting students online and conducting more interactive lessons so that students did not become bored and feel separated from the classroom. Making use of MOOCs and putting what they've learned into practice in

the classroom is one way for educators to boost the academic performance of their pupils.

As all teachers were attending their training online mode so they were practically using and enhancing their technical knowledge which was mentioned by 47 per cent of participants. They mentioned that the knowledge they get from attending the training online and practising their technical knowledge while attending online training, facing new difficulties, interacting with fellow teachers, and learning something new from their peers helps them to develop professionally. When schools did not have any idea how to proceed further especially government schools where all the schools do not have computer teachers or any technical guide to help other teachers to conduct online classes. MOOC training provides exposure to the idea of students' difficulties which helps them to enhance their E-teaching skills. DIKSHA provide a platform where teachers can start their groups and interact with each other.

Offline versus MOOC-Based Training

The ability to critically analyze and improve one's techniques of teaching is an essential component of a teacher's professional development as well as their teaching profession (Zeichner, 1999).

On-campus professional development programs for educators mirror the core values and underlying principles that students want to embody in their personal and professional lives (Perraton, 2010). So, we need to explore how the MOOC system will affect existing teacher professional development programs.

The primary issue is how well MOOCs contribute to the growth of teacher training. There is skepticism among many veteran educators that online courses can deliver the same level of quality training for future educators

as traditional classroom instruction, but there are a few benefits that seem possible only through MOOC-based teacher training, such as an unlimited number of participants can be enrolled, time and place flexibility but in offline mode, there are restrictions on the number of participants, time and place. It is challenging to train thousands of teachers offline all at once at the same time. MOOCs make it possible to bring together thousands of learners from all over the world on the same platform. Anyone, at any moment, can access any available courses, regardless of location, educators are no longer restricted to holding classes at specific times and locations.

Teachers have easier access to educational courses for free thanks to MOOCs which make them an economical option (Banwari, 2018) for enhancing educators' skills. When compared to traditional methods of teacher training, such as workshops, the amount of time spent on conducting training through MOOCs seems to be minimal.

Content on MOOC is accessible multiple times, which provides learners an opportunity to continue their training at their own pace, leading to individualized learning, but offline mode teachers are forced to attend the training whether they like it or not. Sometimes, they are not concentrated or interested, but they do not have a choice. There is no such restriction in online mode.

MOOCs on the DIKSHA app are prepared by leading professors, and experts in their fields to provide high-quality professional training programs in various disciplines. Different types of MOOCs offer online courses with varying pedagogical focuses and approaches. Where in offline mode, training teachers can provide good opportunities to engage in a group discussion, which forms a supportive learning community in the training. It

provides a peer-learning opportunity and social learning which is quite lacking in MOOC. However, MOOCs provide an opportunity to contact learners in different places but most of the participants mentioned that they would like to prefer face-to-face discussion during offline training rather than MOOC discussion forum.

Educators can track their training with the use of MOOCs as it is mentioned in the course that what percentage of the course is completed which can be called a progress report of the learner in the course. This provides proper information about the learner's progress report in every course and helps them to properly analyze their progress but with the offline mode of training keeping track of each participant and sharing it with them regularly is difficult.

Teacher's Perspective: How MOOC Helps In Teachers' Professional Development

During the COVID lockdown, teachers faced a lot of problems keeping in touch with their students and most of the teachers mentioned that in the initial few months of lockdown when they came to know that schools were not going to open soon, they were confused without any plan and guidance of how to continue student's formal education and provide emotional support to them. Participants mentioned that MOOCs provided them with a planned curriculum that mentioned what to do and how to continue students' learning during the lockdown and after the lockdown. It helps them to enhance their teaching skill and develop the skills teachers need while reopening the schools after the COVID lockdown.

The goal of all professional development programs for educators is to ensure high-quality instruction by fostering educators' expertise in curriculum design, instructional strategies,

and community context. Teacher professional development programs should allow for the acquisition of such specialized knowledge and expertise. As mentioned by participants MOOC-based teacher in-service training courses seem to help achieve the goals of professional development.

MOOCs encourage teachers to communicate and collaborate online by providing a secure online learning environment which shows the social potential of MOOCs for teacher professional development. MOOC helps teachers to network with like-minded professionals and share ideas, while also improving their communication with students and receiving more insightful feedback. Teachers mentioned that changes are needed to some aspects of online education to meet the objectives of teacher professional development. A few teachers mentioned that they skipped the course content and directly attempted the assessment with the help of the Google search engine which pinpointed that there is a great need to find how we can deal with this loophole to evaluate the learning to make sure that participant has achieved their professional development goals.

One of the foremost benefits of using the DIKSHA platform for in-service training is that courses are available in 12 languages (English, Hindi, Kannada, Bengali, Marathi, Tamil, Telugu, Urdu, Assamese, Gujarati, Odiya, and Punjabi) which ensures that courses become accessible to a large proportion of Indian population. Teachers can choose any language depending on their comfort and convenience.

Participants mentioned that MOOCs provide them with ideas leading to re-evaluating their lessons. The lectures, curriculum, and materials in a course are developed by experienced educators. Learners gain a fresh perspective by taking part in a MOOC. It demonstrates

effective methods for teaching a given subject area. As a result, teachers get benefits in two ways: first, they gain insight into how their students learn best in an online class, and second, they gain insight into how to best plan their classes. Teachers explore different courses that have different methods and styles of teaching. They acted as a student in different courses which gave them insight into student's perspectives and learning styles. This helps them during the COVID lockdown period when they need all the help they can get to teach online.

By taking online classes teachers become able to improve the way to teach and become able to keep up with the latest advancements in technology. With this, they were able to improve the way of delivering lectures. MOOCs provide educators with the opportunity to gain practical expertise in the application of technology in the classroom and make it possible for them to participate in significantly more interactive classes during lockdown. A teacher or a decision-maker needs to keep up with the pace of technological advancement, know what your classrooms are missing, and be aware of how the rest of the world is utilizing technology to improve education. Therefore, MOOCs are the answer to their problems.

Challenges to Using MOOC for Teacher's Professional Development

MOOC-based training requires users to have access to fast internet connections to view the material that is presented in their courses, especially videos. However, the DIKSHA platform provides an option to download the course but with the large size of the training courses but participants mentioned that it is not easy to download and play High-definition videos with slow internet connectivity. The widespread implementation of MOOCs has been hampered by the restricted availability of the necessary infrastructure (Chatterjee & Nath, 2015).

The primary mode of communication in MOOCs, both between a teacher and a pupil and among learners themselves, is typically textual which gradually becomes monotonous. It leads to a lack of oral communication among the learners, and to gain these skills, they need to participate in a traditional program. Additionally, the student feels alone during the training. Because of this, the learner's motivation decreases, which ultimately leads to their dropping out of the training or completing it for the sake of formality.

Suggestions for Improving MOOC for In-Service Training

India is a very diverse nation, both in terms of the cultures that make up its society and the languages. There are 22 official languages mentioned in the eight schedules of the Indian constitution. Since English is recognized globally and Hindi is our mother tongue which is mostly the medium of MOOC this results in excluding a sizeable portion of the audience who do not have the required level of knowledge or acceptable proficiency in both languages (Chatterjee & Nath, 2015). However, it was mentioned that the DIKSHA platform provides courses in 12 languages, but only a very limited number of courses are available in languages other than Hindi and English. Therefore, one of the foremost challenges that learners face and that the providers of MOOCs need to address more practically is that they need to translate or develop the courses in different Indian languages.

The people of India must prioritize the need to have greater access to the internet and improve its connectivity.

MOOC-based teacher training has spurred innovative approaches to education, such as the Flipped Classroom and hybrid learning. Further, MOOCs offer an efficient and relatively inexpensive means of teacher

professional development, which will in turn aid in the construction of a network of professionals with participants from all over the world. Incorporating both MOOCs and in-person instruction could be an effective strategy for improving the quality of education professionals. Incorporating MOOC in blended mode can reduce the expenses of training as traditional training requires a venue and participants need to travel long distances which are also borne by authorities and can be easily reduced by the training through blended mode (Online + Offline). Participants mentioned that both online and offline modes have their limitations, which can be overcome by the blended mode.

Discussion

The literature provides evidence to support the results of the survey. Numerous studies highlight the positive impact of using MOOC for in-service training for the professional development of teachers.

MOOCs have emerged as a promising platform for teacher professional development, offering flexible and accessible learning opportunities for both pre-service and in-service teachers (Vitor Gonçalves et al., 2016; T. Phan & Meina Zhu, 2020). The diverse pedagogical techniques that were presented in the MOOCs provided wonderful opportunities for experiential learning for K-12 pre-service and in-service teachers. These teachers were able to draw instructional lessons that they might use in their current and future professional activities. (Phan, & Zhu, 2020)

Teachers benefit from free, high-quality resources for professional growth and advancement thanks to MOOCs (Jobe et al., 2014). It can be a great alternative to the traditional ways of professional development that teachers have been taught at teachers' training centres.

This confidence is based on the idea that MOOCs can help train a lot of teachers because they are convenient, available, and easy to use. Also, training based on MOOCs is easy to use and can be changed to fit different cultures, languages, and educational settings. (Hilali & Moubtassime, 2021)

Gordon et al. (2015) also support the idea of using MOOC for training and mention it is not just a viable option but a requirement to train a large number of public personnel who require training at the local regional, and national levels.

Conclusion

All nations should place the utmost importance on elevating the standard of their educational systems. In recent years the Indian education system has made tremendous strides and notable attempts to improve and MOOC-based in-service training was one among them which lit the path by guiding teachers during lockdown. MOOC-based training provides benefits in terms of time, place, and budgetary costs. As a more advanced type of online education, MOOC is better in many ways, including 24x7 content access to all and objective evaluation of learning. As a result, it has the potential to contribute significantly to educators' ongoing professional

growth compared to offline mode. Most teachers have positive attitudes and support for the initiative. Teachers mentioned that they only need the Internet and mobile devices to access the courses which saves their travelling time and provides them with the opportunity for independent, individualized learning and self-paced learning where teachers have the right to decide to schedule their time and choose their place of learning. With this, teachers also get to explore and satisfy their curiosity of getting answers to their queries. During COVID Lockdown where classes were conducted online, they got ideas for planning and conducting their classes in different and interactive ways. MOOC-based in-service training helps authorities supervise the training as they have to submit their course completion certificate to them. The survey shows that the completion rate of MOOCs is high, which shows that it helps achieve the objectives of the training. With this, the research concludes that MOOCs have the potential to fulfil the demands of professional growth among educators. However, there are a few challenges like internet speed issues and limited ways of communicating with fellow teachers so it was suggested that there is a need for a blended mode of training that will balance the limitations of both online and offline training.

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