

# Professional Development of Teacher Educators: Unlocking Opportunities through Massive Open Online Courses

Binayak Dey<sup>1</sup>, Professor B. N. Panda<sup>2</sup>

<sup>1</sup>PhD Scholar, Department of Education, Regional Institute of Education (RIE) NCERT, Bhubaneswar

<sup>2</sup>Professor & Dean of Research, Regional Institute of Education (RIE) NCERT, Bhubaneswar

## Abstract

Development of any nation depends mainly on the standards of its educational institutions and the quality of education. Amidst this dynamic environment, Massive Open Online Courses have emerged as a potent tool for facilitating continuous learning and skill enhancement among professionals across diverse domains. Professional development of teacher educators stands as a cornerstone for fostering effective teaching practices and nurturing the next generation of educators. This research seeks to explore the myriad ways in which MOOCs can be leveraged to enhance the professional development of teacher educators. This democratization of education fosters inclusivity and equity in teacher training initiatives. This paper aims to contribute to a deeper understanding of how digital technologies can be harnessed to empower educators, enhance teaching and learning outcomes, and ultimately, transform the landscape of teacher education. This paper concludes that MOOCs have emerged as an asset in the professional development toolkit for teacher educators. MOOCs provide accessible platforms where educators can engage in self-directed learning, access a wealth of resources, and collaborate with peers worldwide, transcending the limitations of traditional professional development methods. Pedagogical strategies in MOOCs are essential for professional development as they enhance learning experiences and outcomes. The flexibility and accessibility of MOOCs, combined with well-designed pedagogical approaches, empower individuals to advance their careers, and maintain lifelong learning, ultimately contributing to professional growth and competence.

**Keywords:** Professional Development, Teacher Educators, Massive Open Online Courses

## 1. Introduction

Teacher education is vital in creating a pool of school teachers to shape the next generation. The teacher is the one who can change the society. The roles and responsibilities of a teacher are changing from time to time. In the fast-paced world of education, the professional development of teacher educators proves to be essential in encouraging effective teaching practices and supporting and mentoring upcoming generations of educators. The efficacy of teacher educators directly impacts the quality of education delivered in classrooms worldwide, making their professional development a matter of paramount importance. Unlike other professions, education is in a constant state of flux, driven by advancements in technology, evolving pedagogical theories, and changing student demographics. Professional development empowers teacher educators to stay abreast of emerging trends, research findings, and best

practices in teaching and learning, thereby enhancing their ability to prepare pre-service and in-service teachers for the challenges of the present society. Professional development in teacher education encompasses a spectrum of activities to enhance educators' pedagogical skills, content knowledge, and instructional strategies. It fosters a culture of lifelong learning among educators, instilling in them the mindset of continuous improvement and adaptation. By engaging in professional development activities, teachers expand their repertoire of instructional techniques and cultivate their capacity for critical reflection, self-evaluation, and collaboration with colleagues. This ongoing process of learning and development enables teachers to respond effectively to the diverse needs of their students, adjust their instructional approaches as necessary, and contribute to the overall improvement of teaching and learning outcomes.

Traditionally, teacher educators have relied on workshops, seminars, and in-service training programs to stay abreast of emerging trends and pedagogical approaches. However, these traditional modes of professional development often face challenges of accessibility, scalability, and sustainability. With their open-access online learning platform, self-paced learning modules, and diverse course offerings, MOOC presents a viable solution to address these challenges and democratize access to high-quality professional development opportunities for teacher educators at all stages of their careers. Therefore, in the context of teacher education, integrating MOOC into professional development initiatives holds immense promise for enriching pedagogical practices, promoting collaboration, and fostering innovation. MOOC offer a compelling alternative by providing educators with open-access online learning platforms where they can engage in self-paced learning, access high-quality resources, and collaborate with colleagues from around the globe.

Moreover, the interactive nature of MOOC enables teacher educators to experiment with new teaching methodologies, explore diverse perspectives, and reflect on their practice in ways that transcend the constraints of traditional professional development formats. MOOC provide teacher educators with access to a vast repository of resources, including multimedia content, interactive simulations, and discussion forums, allowing them to explore a wide range of topics, instructional strategies, and best practices relevant to their professional goals and interests. MOOC facilitate collaborative learning and networking opportunities among teacher educators from diverse geographical and cultural backgrounds. Through discussion forums, virtual peer feedback sessions, assignments, and collaborative projects, MOOC participants can exchange ideas, share experiences, and form professional communities of practice, fostering a culture of collegiality, mutual support, and knowledge sharing. At the international level, the United Nations (UN), the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the European Union (EU) are emphasizing the imperative of integrating Information and Communication Technology (ICT) into teacher education programs. Simultaneously, within India, governmental bodies such as the Ministry of Education, University Grants Commission (UGC), National Council of Educational Research and Training (NCERT), and the National Council for Teacher Education (NCTE) are advocating for the incorporation of online learning and the integration of ICT within teacher education programs and has launched several initiatives aimed at leveraging MOOC platforms to support the professional development of teachers across the country.

## **2. Theoretical Background and Insights**

Massive Open Online Course have emerged as a promising avenue for professional development in various fields, including teacher education. The integration of technology in education has revolutionized

traditional learning paradigms, offering accessible, flexible, and cost-effective opportunities for educators to enhance their skills and knowledge. Understanding the theoretical underpinnings of MOOC in the context of teacher professional development requires examining key concepts such as constructivism, social learning theory, and the affordances of digital platforms. At the heart of modern educational theories lies the constructivist approach, which posits that learners actively construct their understanding and knowledge through meaningful experiences. MOOC with their interactive multimedia resources, discussion forums, and collaborative activities, provide a fertile ground for constructivist learning. Educators engaging in MOOC can explore new concepts, reflect on their practice, and co-construct knowledge with peers from diverse backgrounds, thereby enriching their professional development. Conversely, social learning theory emphasizes the importance of social interactions in the learning process. MOOC facilitate social learning through features such as peer assessment, discussion forums, and collaborative projects. In teacher education, this collaborative aspect is particularly valuable as it fosters a community of practice where educators can share insights, exchange resources, and provide mutual support. Additionally, connectivism is a learning theory that emphasizes the role of networks and connections in learning. In the digital age, knowledge is distributed across networks, and the ability to navigate these networks is crucial for effective learning. MOOC embody the principles of connectivism by providing access to a vast array of resources, experts, and communities of practice. Through MOOC, teachers can tap into these networks to access up-to-date information, engage with leading experts in the field, and collaborate with educators worldwide. Furthermore, connectivism highlights the importance of developing digital literacy skills to navigate and evaluate online resources effectively. As teachers engage with MOOC, they have the opportunity to develop these critical digital literacy skills, which are essential for effective teaching-learning.

### 3. Review of Literature

Every nation's development is largely based on the standards of its educational institutions. The teacher is the one who can change the society. There is a lack of consistency in professional development opportunities for teachers in all developing countries, including India, due to systemic inequities in access to these resources (Robinson, 2008). In this context, MOOC offer an effective alternative. They can serve as an excellent medium for the professional development of teachers in many ways (Choy et al., 2006). Teachers are expected to stay updated with advancements in both pedagogy and technology (Kumari, 2016). Some teachers struggle to find professional development opportunities due to time constraints and other responsibilities. The flexibility of MOOC in terms of time and location helps bridge this gap (Wei et al., 2009). MOOC is a substitute medium for professional development (Castano et al., 2018). MOOC plays the important role in the professional development of teachers, and enhancing the quality of training programme of in-service teachers through online mode (Kumari, 2016). MOOC can be a cost-effective and resource-efficient way to complement traditional methods of professional development (Misra, 2018). MOOC is an existing large manifesto that can reach to thousands of people (Smith, 2017). The flexibility in curriculum and adaptability to different situations is another important feature of MOOC, making them a valuable resource to meet teachers' professional needs according to their circumstances and their students' requirements (Choy et al., 2006). MOOC provide opportunities to explore, gather, create, and enhance new knowledge and skills (Sezgin, 2020). It was also suggesting that open courses, including MOOCs, can be used for professional development (Olsson, 2016).

#### 4. Objectives of the Study

This research seeks to explore the myriad ways in which MOOC can be leveraged to enhance the professional development of teacher educators. By examining existing literature, empirical studies, and case examples, this paper aims to elucidate the unique affordances of MOOC in promoting pedagogical innovation, fostering collaboration, and addressing the evolving needs of teacher educators for professional development in the present context.

#### 5. MOOC Platforms for Professional Development

The Government of India has implemented numerous initiatives to support online education, which have helped maintain educational continuity for many people and increase the nation's enrolment ratio. Prominent online platforms in India include NPTEL, mooKIT, edX, Coursera, and SWAYAM. In addition to established MOOC platforms such as Coursera, edX, Iversity, FutureLearn, Khan Academy, Open2Study, Udacity, and Udemy, any educational institution can become a MOOC provider by developing a technological platform that supports their courses. Ambadkar (2014) highlights the role of MOOC in the professional development of teachers in the following points:

- The MOOC platform is designed to be user-friendly and accessible from any location. The main prerequisites for accessing the platform are internet connectivity and a computer. Teachers can learn at their own pace and acquire knowledge at their convenience.
- MOOC provide opportunities for subject-specific professional development and enable learners to choose from various options. Teachers can update their knowledge in their chosen subject area by selecting from a pool of offered topics.
- MOOC are almost cost-free, with only a nominal fee for certification. They offer teachers the opportunity to learn from esteemed professionals at top universities, providing valuable professional development. Educational institutions stand to gain immensely from using MOOC as a low-cost alternative for providing professional development training to their teaching staff. This approach helps them alleviate the financial burden of expensive training programs and offers a more cost-effective solution.
- Interaction in online discussion forums, blogs, and collaborations enables knowledge sharing in the virtual world of MOOC. Collaborating with other teachers through online discussion forums contributes to sharing expertise and resolving queries.
- MOOC offers opportunities for peer assessment, self-assessment, and self-learning. It is widely recognized that teachers can improve their skills, stay current, and enhance their professional abilities by participating in the professional development courses provided by MOOC. Participating in peer assessments or self-assessments through online quizzes and tests motivates educators to aim for higher performance levels.

#### 6. SWAYAM-MOOC in Teacher Education

SWAYAM is a government initiative in India designed to uphold the fundamental principles of education policy: access, equity, and quality. The primary objective of this program is to provide high-quality teaching and learning resources to all, particularly those marginalized. SWAYAM is committed to bridging the digital divide for students who have yet to benefit from the digital revolution and have been unable to engage in the knowledge economy fully. Nine national coordinators have been appointed to ensure the development and delivery of the highest-quality content. They are AICTE for self-paced and international courses, NPTEL for engineering, UGC for non-technical post-graduation education, CEC for

under-graduate education, NCERT & NIOS for school education, IGNOU for out of the school students, IIMB for management studies and NITTTR for the Teacher Training programme.

National Coordinator of SWAYAM-MOOC	Name of the MOOC
IGNOU	<ul style="list-style-type: none"> <li>▪ Teaching &amp; Learning.</li> <li>▪ Pedagogy of Science.</li> <li>▪ Childhood and Growing Up.</li> <li>▪ Language across the Curriculum.</li> <li>▪ Understanding Disciplines and Subjects.</li> <li>▪ Assessment for Learning.</li> <li>▪ Education: Concept, Nature, and Perspectives.</li> <li>▪ ICT in Education.</li> <li>▪ Design and Facilitation of E-Learning Courses.</li> <li>▪ Guidance and Counselling in Schools.</li> <li>▪ Instructional Design.</li> <li>▪ Educational Communication Technologies.</li> <li>▪ School Management and Leadership.</li> <li>▪ Selection and Integration of Technology in Educational Processes.</li> </ul>
NITTTR	<ul style="list-style-type: none"> <li>▪ Academic Leadership in Cross Cultural context of Higher Educational Institutions.</li> <li>▪ Advanced Instructional Methods.</li> <li>▪ Communication Skills Modes &amp; Knowledge.</li> <li>▪ Design Thinking for Educators.</li> <li>▪ E-content Development.</li> <li>▪ Education for Sustainable Development.</li> <li>▪ Educational Video Production.</li> <li>▪ English for Research Paper writing.</li> <li>▪ ICT in Teaching &amp; Learning.</li> <li>▪ Institutional Assessment.</li> <li>▪ Intellectual Property Rights.</li> <li>▪ Mentoring and Counselling Skills for Teachers.</li> <li>▪ National Education Policy and Institutional Building.</li> <li>▪ Quality Assurance through NAAC Accreditation Process.</li> <li>▪ Student Psychology.</li> <li>▪ Virtual Education.</li> <li>▪ Virtual Simulation Tools based Interactive Teaching and Learning Strategy.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Basic Concepts in Education.</li> <li>▪ Braille &amp; Assistive Devices.</li> <li>▪ Early Childhood Care and Education.</li> </ul>

CEC	<ul style="list-style-type: none"> <li>▪ Educational Psychology.</li> <li>▪ Health Psychology.</li> <li>▪ ICT Skills in Education.</li> <li>▪ Human Growth &amp; Development.</li> <li>▪ Identification of Children with Visual Impairment and Assessment of Needs.</li> <li>▪ Mental Health &amp; Adjustment.</li> <li>▪ Psychology of Development &amp; Learning.</li> <li>▪ Psychology of Motivation &amp; Learning.</li> <li>▪ School Counselling.</li> <li>▪ E-assessment</li> <li>▪ Sociology of Education.</li> </ul>
NIOS	<ul style="list-style-type: none"> <li>▪ Diploma in Elementary Education (D.El.Ed).</li> </ul>

### 7. Pedagogical Strategies of MOOC for Professional Development

Design principles and pedagogical approaches significantly influence the success of MOOCs for teacher training. In teacher training situations, MOOC can improve learner engagement, knowledge acquisition, and skill development by implementing certain design principles and pedagogical practices. Following are some essential important guidelines and tactics, along with pertinent in-text citations:

Active Learning:	active learning techniques like interactive quizzes, conversations, and project-based assignments increases student engagement and knowledge retention (Jansen et al., 2015)
Individualization:	tailoring learning experiences to fit each learner's requirements and preferences increases motivation and satisfaction among students (Liyaganawardena et al., 2013)
Social Learning:	promoting cooperation, peer contact, and idea sharing through online discussion forums or social media platforms helps create a sense of community and promotes knowledge creation (Hew et al., 2014)
Continuous Assessment:	regular assessments, such tests or self-check exercises, enable students to keep track of their development and receive feedback for on-going development (Suen et al., 2018)
Integration of Multimedia:	integrating various multimedia elements - such as films, interactive simulations, and visual aids into lessons increases learner engagement and comprehension (Chen et al., 2014)
Scaffolded Learning:	providing defined learning objectives, achievable modules or units, and helpful tools and advice helps students successfully complete the course (Ally, 2004)
Application and Reflection:	providing opportunities for students to reflect on their learning and apply what they have learned to real-world situations fosters learning retention (Kizilcec et al., 2017)



Assistance from Course Instructor:	offering timely and valuable instructor help through discussion boards, live webinars, or email correspondence builds a sense of instructor presence and increases student satisfaction (Hew et al., 2014)
Continuous Improvement:	learner feedback and data analytics, regular evaluation and feedback mechanisms enable the improvement of course design and pedagogical tactics (Jordan, 2015)

## 8. Conclusion

In this ever-changing scenario, Massive Open Online Course have emerged as a robust medium to help facilitate learning in several professionals from a range of background. In terms of teacher education, the incorporation of MOOC in the professional development standard can play a significant role in improving the quality of pedagogical practices and in facilitating cooperation and innovation. MOOC can enrich teachers' learning experiences and accommodate their varied needs. Consequently, MOOC hold potential for use in teacher professional development and may play a role in reforming teacher education. MOOC have the potential to significantly improve teachers' learning experiences and cater to their diverse needs. As a result, MOOC hold significant promise for advancing teacher professional development and are likely to contribute to teacher education reform.

MOOC offer teachers access to a wide range of professional development resources regardless of their geographical location or institutional affiliation. MOOC provide flexibility in terms of scheduling, allowing teachers to engage in professional development activities at their own pace and convenience. MOOC platforms host a diverse range of courses covering various topics relevant to teaching and learning. Therefore, MOOC platforms must be made accessible, inclusive, and culturally responsive. Theoretical insights from the study of MOOC can guide policy decisions and practices related to teacher professional development. Policymakers can leverage research findings to advocate for the integration of MOOC into formal professional development programs, allocate resources to support MOOC initiatives and establish quality assurance mechanisms to ensure the effectiveness and relevance of MOOC offerings for educators. Therefore, educational institutions can use evidence-based practices to design and implement MOOC-based professional development initiatives that meet the needs of their teachers and align with institutional goals and priorities.

## 9. Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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