

MOOC Integrated Teacher Education: A Pragmatic Solution For Post-Covid Virtual Training

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Background

The onslaught of heavy monsoon, the subsequent flood and the closing down of educational institutions in the state of Kerala had hit the headlines of almost every newspaper in India in 2018 and 2019. Then, colleges were closed, resulting in loss of instructional hours.

In 2020, when the Covid pandemic struck, lockdown, quarantine, social distancing and an abrupt shift to online learning without any prior training, completely upset the education system. Perhaps the most hit were colleges of teacher education where the focus was not just on transmission and learning through interaction of the prescribed syllabus but, transformation of the student teachers who were expected to take up the teaching profession shortly.

In such unprecedented circumstances, relying on the authorities to find immediate solutions are likely to end up in vain. During such crisis, teacher-leaders have to find alternative workable solutions for continuity of learning. This paper, describes how the investigator-cum-teacher educator addressed the lacuna of non-availability of sufficient instructional hours by availing the auditing mode facility of MOOC courses offered by leading universities followed by building a resource bank for own Continuing Professional Development (CPD) and later using the same for informed and effective transaction of the traditional Bachelor of Education (BEd) syllabus assigned to teach.

Rationale for use of MOOC

Libraries, educational broadcasts and open text books are good resources, but the teacher educator's choice fell on MOOCs owing to the obvious reason that MOOC content are designed by experienced teacher educators for self-learning with minimum teacher assistance. More significantly, they make use of printed notes, PowerPoint slides, short lectures on videos with tape script, visuals and infographics and even audio content for both ease in understanding and illustration of the content.

In a developing country like India, expensive multimedia resources for curricular transaction are hard to come by. Such a handicap naturally allures concerned teachers to MOOC service providers who not only offer good quality illustrative content, but also permit download of the same for free.

Though MOOCs on content related to teacher education are available and accessible through Coursera, Canvas and Future Learn, the investigator found that review or access of such content for own CPD was not undertaken by student teachers. Educators also know that MOOCs on teacher education invariably have similar learning outcomes. This implied that undergoing a MOOC on teacher education or reviewing in the audit mode is in every possibility likely to be useful for teacher educators keen on own CPD.

Rationale for MOOC resource tapping

According to the National Knowledge Commission (NKC, 2007), the teacher is the single most significant element of education. This is to say, the quality of education to a large extent depends on the kind of input provided by the teacher in the class room.

From a quest of available resources from open books and educational broadcasts for own academic enrichment, the investigator came to the obvious conclusion that so long as one works in a knowledge-based industry, continuous lifelong learning is absolutely essential and MOOCs are an invaluable means of accessing updated knowledge.

Regular surfing of the Internet made the investigator realize that many MOOCs exist only for a couple of years and then disappear. So a failure to access and compile resources that are useful for own use, will be lost for ever, affecting the aspiration of a teacher keen on developing professionally.

Through reflection, the teacher educator came to the realization that if own student teachers take the initiative to register for a MOOC related to teacher education, it is imperative on their part to familiarize themselves with the instructional objectives of the MOOC and make informed decisions matching the educational philosophy of the BEd course one is already pursuing. In such instances, the student teacher is not likely to get the necessary advice of an experienced teacher educator for choosing the most suitable MOOC for own empowerment. And as mentioned earlier, in the investigator's own academic setting, student teachers registering for MOOCs on teacher education was unheard of. So, the investigator-cum-teacher educator attempted to place oneself in the learner's shoes and chose the most appropriate MOOC content for student teacher empowerment.

The aim of the study

The three year study which follows the typical Action Research format with informed modifications each year in a participant observation study mode, aims to find out the usefulness of integrating MOOC content with a traditional teacher education syllabus using affordable online tools to make up for instructional hours lost owing to suspension of classes following disasters.

The research questions

1. Can MOOC be adapted for delivery using online tools for teacher education ?
2. Will a teacher-leader initiated use of MOOC content help make up for loss of instructional hours of a traditional teacher education course ?
3. Will the use of MOOC content of leading universities help provide enriched curricular input for a traditional teacher education course?
4. Will the integration of MOOC content with traditional teacher education syllabus help improve the performance of student teachers?

Literature review

A. On Teacher as leader

Teachers who assume the role of leaders can play a significant role in staff development and classroom improvement. But the traditional concept of the Headmaster or the Principal as the leader is undergoing a change. The Teacher Powered School Movement which started in 2014 in the US, brings a new perspective to the leadership role as a bottom up process where teachers identify students' needs and design schools to directly meet those needs. This is found to have transformed both student learning and the teaching profession.

Lovett, an Associate Professor in Educational Leadership, University of Canterbury, New Zealand in an article affirmed the need for distinguishing between viewing leadership as activities to further student learning and the concept of a knowledgeable individual in the role of a leader. To her, a main characteristic of the teacher leader is their enduring commitment to improving students' learning. (p.62-65)

According to Shulman (2018) teachers can create the tone and mood of the room and when teachers create a positive classroom culture, it results in opening of the door for authentic learning. This in turn can lead to more opportunities for students to positively connect with content, their peers, and their teacher. In a similar vein, Cox (2015) while providing professional development tips for teachers, affirmed that it requires teacher effort to go that extra mile for the students who need it.

All these imply that when teachers take the initiative it is possible to find solutions to problems in teaching and learning. That is to say, teacher leadership attribute such as knowledge, skills and values have a positive impact on student learning both inside and outside the classroom.(Phelps, 2008)

B.On teaching-learning resources

Learning and teaching materials play a central role in enhancing the quality of learning and in improving student performance. (Smart and Jagannathan, 2018) Discussing the characteristic of teaching learning resources, Reints (2002) affirmed that resources used in teaching should primarily be stimulating and informative. More importantly, if it is to contribute to the clarity and quality of teaching and learning, it should be easily accessible.

Elliot and Corrie (2015) rightly pointed out, that all over the world, many countries are facing the challenge of insufficient, poor quality and ineffective use of teaching learning materials. But, it has also been found, that if instructional materials are properly selected and used, not only would learning turn out to be meaningful and interesting, learners would acquire different skills and the knowledge gained is likely to be retained for a longer time. Romiszowski (1988); Walkin (1982)

C.On MOOCs and their advantage

2012 was called the “Year of the MOOC” by the New York Times. It was also the time of the birth of well-financed MOOC providers like edX and Coursera (Kovanović, Joksimović, Gašević, Siemens, & Hatala, 2015). However, criticisms and difficulties related to economic sustainability, quality and academic efficiency began to contradict the expansive trend in the context of MOOCs. Nevertheless, the Edu Trends Horizon Report from 2014 explains that MOOCs are still part of the debate of an alternative in education. Recently, discussing learning and teaching in Asia-Pacific universities Fox (2016) pointed out that besides opening up ways of offering courses in non-traditional ways, MOOCs provide opportunity for new thinking and working.

In the section, Hybrid Learning Designs, the NMC Horizon Report: 2014 pointed out a growing renewed interest in online learning prompted by MOOC resulting in a focus on the best of hybrid learning models, which blend the best of classroom instruction with the best of web-based delivery.(p.12) The report also

pointed out that for students unable to travel to brick-and-mortar institutions owing to physical restrictions or disabilities, online learning serves as a vehicle for social equality, reaching disadvantaged students. (p.29)

According to Scagnoli (2012), it is possible to broaden knowledge through the use of MOOC materials such as digital content, videos and reading materials. Chen, X., Barnett, D. R., & Stephens, C. (2013) attempting a critique of the advantages and challenges of MOOCs, affirmed that improving student outcome is its primary goal. Hew (2014) studied three top rated MOOCs across three disciplines, combining participant observation with analysis of reflection data from 965 course participants. From this work they identified five features of MOOCs that promote student engagement: problem-centric learning, instructor accessibility and

passion, active learning, peer interaction and use of helpful course resources. Quite recently Al-Rahmi et al., (2018) found significant impact of MOOCs on student academic performance.

To Bruff, Fisher, McEwen & Smith (2013), in the field of Higher Education, the spread of MOOCs is an indication of technology transforming education. According to Yousef, Chatti, Schroeder, Wosnitza and Jakobs (2014), in higher education, the features of MOOCs make it an effective technology-enhanced model, providing new opportunities to a number of learners. (p.9) Alhazzani (2020) discussing the impact of MOOCs on Higher Education, reiterated the observation of experts that, for economically disadvantaged students who cannot otherwise have access to a university, online learning is a good alternative. The study related to the impact of MOOCs in higher education in Saudi Arabia also pointed out that many instructors are increasingly turning to MOOCs to support the academic courses they are offering.

Bralić and Divjak (2018) found that there is a growing interest to enrich traditionally taught course using MOOCs as complementary resources to achieve teachers' and students' goals. Further, studies have found that the reason for MOOC adoption by individuals included factors such as deepening knowledge in specific areas, improving skills and own professional development.(Rosell-Aguilar, 2013; Radford et al. 2014; Farrow et al., 2015) A list of MOOCs related to Teacher Education available as on May 2021 is mentioned in Appendix I.

Palmer (2015) rightly pointed out, that perhaps, the most natural service MOOC providers could provide is the professional development of teachers. Urrutia, Fielding & White, (2016) found that MOOCs can help develop digital, academic and teaching skills. Discussing the application of MOOCs for teacher professional development in China, Ji and Cao (2016) observed that MOOCs make possible gaining of all kinds of knowledge and bringing it to own classroom teaching to make student learning more efficient.

Methodology

The purpose of this research is to find the usefulness of a teacher-leader initiated innovative attempt to integrate MOOC content to a traditional teacher training programme. It presents the strategy employed and highlights how the innovative approach benefitted the teacher trainees during disasters such as flood and

the Covid pandemic which resulted in closure of educational institutions and the concomitant loss of instructional hours.

The population comprised student teachers undergoing the two-year Bachelor of Education (BEd) course. The sample comprised student teachers of the English optional course of Government-run colleges of teacher education in Kerala State, India in which the investigator served as a faculty. The participants were in the age group of 22 and 26 and the study was conducted between 2017 and 2020. It involved the investigator-cum-teacher educator's attempt to review and access MOOC courses related to teacher education of leading universities on platforms such as Coursera, Canvas and Future Learn. A select list of MOOCs related to teaching from which content was adapted for the study is shown as Appendix II. For selecting the MOOCs a self-prepared check list was utilized (shown as Appendix III). The resources which included reading materials, PowerPoint slides, Videos with tape script and Podcasts, were compiled. The materials on teacher education were specially compiled and classified using a self-prepared check list. (shown as Appendix IV) The investigator basically followed an eight step process which included 1.Explore MOOCs available 2. Identify MOOCs related to content assigned to teach 3. Access the MOOC either by paying the prescribed course fee which aids in own CPD or access the content in the free Audit mode. 4.Compile useful MOOC course content which includes reading materials, PowerPoint slides and videos 5. Relate the compiled content to the BEd syllabus assigned to teach 6.Refine the material to suit student teacher level and need 7.Transact the compiled and refined MOOC content for student teachers. 8. Review the usefulness of the material transacted through informal interviews with student teachers and evaluate course-end performance of student teachers. This is more or less akin to the phases in the choosing of teaching and learning resources proposed by Bušljeta, R. (2013) which included the first phase of selection and initial evaluation, the second phase of presentation and interpretation and the third phase which involved final evaluation.

On educator role in using MOOC content

Though MOOCs are designed for self-learning, many MOOC providers employ the services of mentors to assist in the learning process. Berge (1995) classified such mentor roles into technical, managerial, social and pedagogical. Salmon(2000) proposed a five stage model for mentoring which commences with the mentor facilitating access to learners, motivates them and concludes by getting learners to reflect on the learning process. Further, MOOCs transmit high quality content and utilize computer-marked assessments to provide feedback to participants and within the learning platform ambit, all transactions are usually automated.

In the study, selection and adaptation of MOOC content was done by the teacher educator himself who delivered the content both through face to face and online mode. As most content were originally prepared with a different learning objective, the investigator himself refined and made available the content in digestible chunks ensuring that the content helps realize the learning outcome of the teacher education syllabus. Certain MOOC content also had to be adapted for online delivery. To ensure learning, questions related to the content had to be prepared to check comprehension. The answers to the questions served as feedback following which the investigator further refined the MOOC content or replaced it with another MOOC content in the second and third year of the study. Such a procedure helped address the technical, managerial, social and pedagogical aspects related to use of MOOCs, normally undertaken by mentors.

Interactivity, a key design principle of MOOCs is achieved through cooperative learning and communication between participants.(Downes,2014) In the study, to make up for absence of interactivity as found in a regular MOOC, the investigator while delivering the lecture, interspersed with the MOOC content, introduced activities for pair work and group work. Some such tasks were expected to be completed either in the classroom or during weekend by connecting with peers using affordable social media tools such as email and WhatsApp.

The procedure followed while identifying courses suitable for Teacher Education

*On identifying a MOOC related to teacher education, the range and scope of the course content was critically reviewed to check whether it is worth the time spent for study or auditing.

*Next, a review of the course objective and course materials such as illustrative videos, PowerPoint slides etc. available if any was identified.

The procedure followed while auditing MOOC content after registration

1.Once registration was done, an attempt was made to familiarize with the course format. The prerequisite knowledge stated to be required was consciously matched with the pre-requisite knowledge of the traditional BEd course the teacher educator was assigned to teach.

2.Screen shots of questions posed to check understanding of material learnt was compiled and labelled in separate files for use by own students at a later stage.

3.Wherever additional links to Open Educational Resources (OER) are provided, the links were copied onto a word file and that file was moved to the resource bank folder of specially created content wise files for future use.

4.Links to sites where interested participants can access content for game-based content or interesting videos were copied on to a word file and moved to the related folder in the investigator created resource bank folder. Later, while transacting the content, the links to the sites were provided to student teachers for access and self-learning whenever they were free.

5.For videos, often prompts are given prior to watching a video. If after viewing, the video is found to be particularly helpful for student teachers, the investigator made a special note of the prompts and moved it to the related folder along with the downloaded video for later use with student teachers.

The procedure followed while pruning content chosen after auditing

*Similar topics identified from different MOOCs were classified in a single file and labelled.

*Ease in comprehension noted while auditing was specially noted in the digital file. Such content were prioritized for inclusion in own curriculum transaction along with the traditional course.

*PDF, PPT, Videos, Audio files were all classified separately and labelled. These were made use of for own teaching by identifying ease in comprehension by student teachers.

The procedure followed while tweaking in MOOC content along with traditional content

*Global comprehension questions were posed to student teachers who have just been presented an audited MOOC content such as a short video. This was consciously done to get feedback about the difficulty level of the material.

*Whenever reading materials from MOOCs such as PDF or Word Doc or teacher made notes were supplied, a task related to the material was deliberately given to ensure that the student teacher, reads the material.

Results and discussion

The strategy

The repeated onslaughts of heavy monsoon, flood and in recent times the Covid pandemic not only upset normal classroom instruction but also hindered the possibility of reaching out to student teachers to provide relevant knowledge, attitudes and skills to function effectively in their teaching profession. Such scenarios necessitate teacher-leaders to show initiative and introduce innovative practices to foster student acquisition of desired cognitive skills, bodies of knowledge and their affect. The strategy employed for identifying and transacting the content in a collaborative mode using high quality MOOC content outside the ambit of the MOOC platform enabled the investigator's students badly hit by accessibility and affordability issues to continue education. Such a strategy indirectly addressed the 21st century challenge related to providing cost-effective and high quality learning experiences identified by Torrisi-Steele & Drew (2013).

In MOOCs, the learners can choose the content they wish to learn provided they are motivated for self-learning and has the ability to sift through the content essential for own empowerment. But when students are seldom motivated to register for MOOCs they fail to get access to high quality content produced by leading universities. In the study, the teacher educator identified the most appropriate content which not only matched the knowledge level of own students but also helped add variety to the

traditional content employed for own teaching. Select activities and assessment strategies found to be useful were noted and tweaked into own teaching while utilizing the content of the chosen MOOC. Incidentally Shulman (2018) while writing about ways in which educator can make classrooms more innovative, referred to ‘Problem Finding’ which requires an intellectual and imaginative vision which tries to seek out what might be missing. She also proposed the Design-Thinking Process which identifies challenges, gathers information, generates potential solution. This is invariably followed by refining of the idea and testing the solution. The pedagogic strategy employed by the investigator-cum-teacher educator, basically attempted to identify loopholes in the BEd curriculum transaction resulting from loss of sufficient instructional hours and tried to fill in the ‘missing’ elements which Shulman mentions.

One of the advantages of learning through MOOCs is that participants get an opportunity to learn from the contributions of other learners. There is also scope for generation of meta-level knowledge by becoming a part of community of learners. But in the study, no attempt was made by the investigator to create a learning environment matching the traditional MOOC learning environment. But this disadvantage was overcome by the continuous presence and support of the teacher educator during blended learning and asynchronous learning made possible through 24X7 connectivity using social media tools. However, learners prone to self-reflection had tremendous scope for learning, as the quality of content drawn from MOOCs delivered by the teacher educator was of a very high quality. When instructional hours are lost, non-availability of teacher assistance and inaccessibility of good resources would necessitate learners to attempt self-study with available resources or in extreme cases withdraw from active learning. An obvious advantage of the use of MOOC content by the investigator was that, student teachers got an opportunity to grasp fundamental concepts through lucid explanations of high quality MOOC content. Informal interviews and course-end student teacher performance found that the strategy followed by the teacher educator, benefitted the student teachers. The resource bank was found to be particularly useful for the teacher educator when calamities such as flood and pandemic resulted in shut

down of educational institutions and teachers and learners were compelled to learn online with limited face-to-face instruction. Here, it is worth recalling the fact that according to 'Quality Matters', a US quality benchmarking certification programme, MOOCs can be integrated to higher education programmes easily as they are designed for the typical student.(Legon,2013)

The investigator's planned incorporation of high quality content from MOOCs offered by leading universities lend scope for student teachers to develop an advanced competence compared to peers in other colleges of teacher education studying just the traditional BEd syllabus with available local resources which are often found to be inappropriate or of lower quality. Alternatively, the strategy employed by the educator to transact traditional syllabus along with resources tapped from MOOCs was also found to be beneficial for learners with disability who often struggle to register and pursue MOOCs without assistance.

The instructor of a MOOC is expected to sequence and moderate the content delivery and related activities while maintaining overall focus on meeting the stated learning objectives and outcomes. But while adapting MOOC content, the educator had to doubly ensure that the content incorporated ensured attainment of expected learning outcome of own BEd programme. It also becomes necessary to cross check and ensure through regular feedback that the incorporated MOOC content in no way widely deviates from the expected learning outcome in the educator's ambitious effort to enable student teachers to develop higher competencies. As the study was conducted in the Action Research, participant observer mode, at the end of each Action Research cycle, based on feedback received from the student teachers, the investigator could make necessary changes in the MOOC content. On occasions it was also possible to change the strategy in using the content from online delivery to face-to face mode, asynchronous to synchronous mode or flipped style to actual class room transaction.

Usually in MOOCs, the course instructor encourages ongoing peer-to-peer engagement to facilitate active learning on the Discussion Forum. But while incorporating MOOC content to a traditional course, the investigator had to chalk out the specific learner role for assimilating the content. Merely posing a

question for peer-to-peer discussion and withdrawing could result in student teachers merely repeating or rephrasing peer responses as found in Discussion Forums of MOOC courses. Hence, in this study, the responses to queries were usually educator directed during synchronous learning with scope for immediate feedback and peer-learning from student response.

In a traditional course, the participant is expected to take reasonable ownership of own learning, find time to complete weekly tasks by reading materials and participate in Discussion Forums. Studies have shown that not all learners are adept at such a mode of learning and often tend to fall behind and even discontinue the MOOC for which one originally registered out of enthusiasm. Chang, Hung, & Lin, (2015) for instance found reflective learning styles, preference for traditional delivery methods and levels of anxiety affecting MOOC adoption. García Espinosa et al., (2015) also identified two barriers to MOOC adoption such as the failure to attend to the personal need of learners and lack of workplace understanding and support. Incidentally, this study which employed MOOC content, consciously addressed such issues through a selection of appropriate content from an assortment of courses and by transacting them in digestible chunks to ensure student learning during synchronous learning by posing questions at random to learners. In addition, throughout the study the teacher educator's presence and scaffolding was made possible through 24X7 connectivity with learners using social media tools.

Large texts or long videos compiled by tapping MOOC content were invariably supplied through email to be utilized in a flipped style learning mode and the student teachers were expected to return to class after having read/ viewed the video . Often they were expected to perform tasks based on the reading material/ video supplied or answer application level questions based on the material. This was deliberately introduced to ensure that the efforts at resource tapping and the ultimate objective of students grasping the content turned out to be a fruitful experience for the learner and worth the time and effort of the educator who engaged in utilizing MOOC content for the benefit of own learners.

All Learning Management Systems and platforms offering MOOCs are not completely user friendly. Often participants require technical support to download or access resources. Repeated failure to access the

material or technical hassles arising from poor internet connection can also result in dropout from MOOCs. Such a problem never arises for the students who learn from quality MOOC content chosen, refined and supplied via email or presented with care during synchronous learning by the teacher of a traditional course.

Inclusion of MOOCs as additional Course Credit is a growing trend in many institutions. But such institutions would invariably have to justify that the use of MOOCs in no way sacrifices the academic rigour of the programme being offered by the institution and that it supports the learner needs without sacrificing student learning outcome. In this study, when the educator assumes the role of teacher-leader and incorporates content from MOOCs out of own conviction to lead students to attain a higher level of competence, the accountability rests primarily with the educator and not the institution as such. Moreover, given the fact that the educator has the prime responsibility of proper transaction of assigned content of the traditional course and its assessment even while integrating MOOC content, the usual criticism that accompany the use of MOOCs for credit programme is not likely to arise.

In MOOCs, if a particular resource or activity is found to be ineffective, it is not easy to provide an alternative activity or resource immediately. Such a situation never arises when an educator adapts MOOC content for own teaching because, while receiving feedback, if a particular resource or activity based on the MOOC content is found to be unsuitable, the educator can either drop the activity or replace the content and activity with a different one.

In MOOCs the course objectives are predefined and the target audience is usually an average learner. But those pursuing MOOCs know that some content may not appear to be appropriate from a cultural perspective. Further, it is commonly acknowledged that in learning any content, when an attempt is made to relate it to local texts and real life experiences, the learning experience becomes more meaningful. Unlike the MOOC instructor who has no idea about the learner who may be from an entirely different continent or country, the person most suitable to relate the content to the local text or local life is undoubtedly the learner's teacher who meets the learner regularly in the institution where the learner

undergoes the course. Hence, one of the greatest merits of the strategy employed by the investigator is the successful inclusion of high quality MOOC content and relating it to the learner's own life and making the learning experience more meaningful.

A typical video of a MOOC offered by a reputed university will invariably be useful. But for most students downloading it to check its very usefulness might require mobile phones or internet connections with sufficient bandwidth. Given the fact that in a Government- run college of teacher education where subsidized education is given, students expect teachers to provide essential learning content and rarely take the initiative to register for a MOOC offered by a leading university, even if it has a free audit mode. Those who have registered and pursued MOOCs for own professional development would be familiar with the learning design normally employed. Many MOOCs make use of a behaviourist-cognitivist approach to learning, placing a heavy emphasis on correct answers for conceptual questions. But educators (the investigator included) following Constructivist practices in their class rooms know that collaborative learning with teacher presence has greater possibility of informed learning. Harasim (2012) for instance affirmed the need for the presence of a subject expert to clarify misconceptions or misunderstanding for deeper understanding. This then indirectly implies that the investigator's attempt to cull out useful content from MOOCs and making it available to own learners in small digestible chunks with teacher presence for scaffolding and assistance with pair work and group work, turned out to be extremely beneficial learning experience for the student teachers.

Review of the research questions

The study has shown that MOOC content can be adapted for delivery using online tools for teacher education. From hindsight, the investigator found that the teacher educator initiated use of MOOC content, largely helped in delivery of quality content which student teachers crave for. The online strategy employing the synchronous and asynchronous mode when students are unable to attend classes in the face to face mode, tremendously helped make up for the loss of invaluable instructional hours of a teacher training programme. The use of high quality MOOC content of leading universities prepared by experienced educators

comprising reading materials, PowerPoint slides and short videos made possible delivery of enriched curricular input for a traditional teacher education course. The videos on teaching adapted from MOOCs were found to have immensely helped the student teachers in planning for lessons. They also displayed a thorough understanding of the process involved during teaching practice and tended to make very few mistakes. The batches taught using a large percentage of MOOC adapted content also showed a conceptual clarity for the responses given during the viva voce examination. An evaluation of the performance of the student teachers for the course end written examination, showed an improved performance than the one the teacher educator used to perceive in his two decade long experience of teaching BEd trainees.

Limitations of the study

*The research context for this study are student teachers of the Bachelor of Education of the English Optional course offered in Government- run colleges of teacher education where the investigator served as a faculty. A similar study in a Government- aided private institution where students from a better socio- economic background attend would have yielded a different result.

*In the study, there is a heavy reliance on qualitative data collected by the investigator as a participant observer and nuances of individual learning experience has not been fully captured.

* More importantly the study was conducted by an investigator cum teacher educator who has specialized in Educational Technology and had been for almost two decades exploring the use of digital tools for education and is fairly adept at choosing digital tools and instructional strategies that benefit own learners unlike a teacher educator who has received no prior training in the use of digital resources. Further, the investigator drew on the familiarity of having registered and completed no less than twenty five MOOCs from leading universities for own professional development. So a replication of the strategy mentioned in the study by a novice teacher educator unaware of the range and type of content on MOOC related to teacher education available for auditing and adapting may yield an entirely different result.

Scope for future research

*The usefulness of the tentative findings of the study has to be fully explored through additional research with teacher educators teaching different subjects. Similarly such studies can also be attempted in other disciplines too.

*In the study, the investigator made a profuse use of MOOC content for instructional purpose in a traditional setting among student teachers who seldom take the initiative to pursue a MOOC and some MOOC content adapted for the study was transacted online. Peltier et al. (2007) found MOOC course content to be a significant factor which determined the perceived quality of the experience gained online. This implies that the strategy employed in the study has every possibility of learners getting sensitized to the nature and range of MOOC content. This then is likely to trigger an interest among student teachers to pursue MOOCs by registering for additional resource or for own CPD in future. So a study to find how student teachers introduced to MOOC content during their training perceived the usefulness of MOOCs and later pursued MOOCs for own professional growth is worth undertaking.

*More in depth quantitative research is recommended for uncovering emergent issues of shifting to full time virtual teacher education in view of the shutdown of educational institutions owing to the Covid-19 pandemic.

Conclusion

Research on the use of MOOCs for CPD and lifelong learning is common but the use of select MOOC content through an integration to traditional courses particularly of a teacher education programme is rare. The study commenced with the teacher educator's reconnaissance of MOOCs related to teacher education offered by leading universities for own CPD. But when natural disasters began to affect the delivery of instruction owing to closure of educational institutions, without waiting in vain for institutional leaders to provide solutions, the teacher educator, self-initiated workable strategies to deliver quality instruction and ensure continuity of learning.

The usefulness of the study was found out by regularly collecting feedback on learning using MOOC content, along with difficulty experienced if any in learning from the content and the strategy employed by

the teacher educator. At the end of every academic year, the performance of the student teachers were evaluated through internal assessment which included performance during the Practical Examination which necessitated the student teacher to employ the theoretical knowledge gained from the MOOC content, the oral examination and performance in the Course-end university examination. More significantly, the strategy employed in the study made possible, raising of the quality of instruction of traditional teacher education programmes. The transaction of high quality MOOC content in the online mode ensured continuity of learning during periods of disruption caused by floods or pandemic. Given the usefulness of the strategy employed, it is high time that institutions of teacher education adopted a clear, consistent open learning strategy and accommodated it by properly calibrating it with the formal instructional strategy employed in the institution.

In the study, MOOC content related to the prescribed syllabus of the Bachelor of Education programme was identified by the investigator-cum teacher educator, followed by a compilation of appropriate learning materials as a resource bank and finally integrating the content with the traditional syllabus utilizing affordable online social media tools. Feedback from student teachers and their course end performance revealed that the investigator-cum-teacher educator's attempt to utilize MOOC content for classroom teaching proved beneficial. The eight step strategy of tapping MOOC content and using it discreetly for an enriched curriculum transaction in the colleges of teacher education where the investigator taught are worth emulating in contexts where teacher educators have limited good quality resources. More significantly, the strategy shared can serve as a pragmatic solution and a road map for teachers struggling to gear up for Post Covid teacher education which is increasingly shifting to virtual training.

APPENDIX

Appendix I

Select list of MOOCs related to Teacher Education available as on May 2021

Sl.No.	Title of Course	Offered by	Whether free auditing is permitted
1	Foundations of Teaching For Learning: Introduction	Commonwealth Education Trust on Coursera	Yes
2	Foundations of Teaching For Learning: Curriculum	Commonwealth Education Trust on Coursera	Yes
3	Foundations of Teaching For Learning: Planning for Teaching	Commonwealth Education Trust on Coursera	Yes
4	Foundations of Teaching For Learning: Introduction to Student Assessment	Commonwealth Education Trust on Coursera	Yes
5	Foundations of Teaching For Learning: Developing Relationships	Commonwealth Education Trust on Coursera	Yes
6	Foundations of Teaching For Learning: Being a Professional	Commonwealth Education Trust on Coursera	Yes
7	Understanding Classroom Interaction	University of Pennsylvania on edX	Yes
8	Learning, Knowledge and Human Development	University of Illinois at Urbana-Champaign on Coursera	Yes
9	Literacy Teaching and Learning: Aims, Approaches and Pedagogies	University of Illinois at Urbana-Champaign on Coursera	Yes
10	Instructional Design: Digital Media, New Tools and Technology	University of Maryland on edX	Yes

Appendix II
Select list of MOOCs related to teaching from which content was adapted

Sl.No.	Title of Course	Offered by	Platform
1	Teach English Now (Part I and II- Total 6 courses & 2 Capstone Projects)	Arizona State University	Coursera
2	English as a Medium of Instruction for Academics	University of Southampton	Future Learn
3	Understanding Language: Learning and Teaching	University of Southampton& British Council	Future Learn
4	Blended Learning Essentials: Getting Started	University of Leeds	Future Learn

Appendix III
Checklist while choosing MOOC

Sl. No.	Criteria
1	Does the MOOC provider permit download of materials?
2	Are the course objectives related to the topic of the teacher education syllabus?
3	Is variety available in the resources offered in the course?
4	Is the course content of current value and if yes is it suitable for own CPD?
5	If chosen for own CPD is it affordable ?
6	If chosen for CPD is there flexibility in completion of the course?
7	If two MOOCs offer similar content, which has better coverage?

Appendix IV
Checklist for selecting content during Resource Mining

Sl.No.	Criteria
1	Is the language easy to comprehend?
2	Is the content culturally appropriate?
3	Is the content properly explained ?
4	If printed text, is it too long?
5	If video, is the audio and video clear?
6	Is Tape Script available if there is too much use of language in the video?
7	Can locally available tools be used to play the video when downloaded and shared?
8	Is the content related to the prescribed BEd syllabus?
9	Can the content serve as illustrative material for topics in the BEd syllabus?
10	Is the content related to similar material already compiled? If yes which is the best?

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