

Feasibility of MOOCs to Facilitate Awareness of the Sri Lankan School Teacher on Online Teaching-Learning Platform

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Abstract

COVID-19 pandemic crippled the conventional education system, forcing it to shift to mandatory online teaching-learning platforms that the teachers found difficult to adapt without proper training. However, recent research shows that MOOCs can be used as a method of teacher training (Koukis & Jimoyiannis, 2019; Tang, 2021). This survey was conducted to determine the feasibility of implementing a MOOCs based awareness programme about online teaching-learning platforms and tools in teacher training programmes (TTP). With more than two hundred thousand teachers islandwide, it was initially planned to train the teachers on the effective use of online tools.

After the preliminary investigations, a Google form-based questionnaire was used with a purposive sample of teachers (n=70) around the country, representing different locations. Moreover, Interviews with selected teachers, sectional heads and principals were conducted. The SOLR Model (Yu & Richardson, 2015) has been used as the theoretical model. Results of the initial investigation show a lack of digital literacy and proper devices to be used in online TTP. Therefore, those aspects were investigated prior to the implementation of the MOOCs. It was identified that lack of literacy in certain areas prevented the maximum utilisation of available resources. Thus, either these issues must be resolved before implementing the MOOCs or making the sample aware as a separate part of the teaching process. After identifying the limitations, this study is expected to carry on further with the intention of implementing the first stage of MOOCs to provide basic knowledge on online learning and the tools required for the purpose, which is expected to narrow the digital divide among the teachers.

Key Words: teacher training, MOOCs, COVID-19 pandemic, school teachers, online learning

Introduction

In an early publication, *Open Education in Practice*, Shaw (2013) declared that it provides a handy overview of key open education projects and introduces the significance of school-related projects. He further stated that It should be a source of material of special interest to those involved in teacher training or development or open education from either a school or a university. Moreover, a contemporary author has elaborated further (Crisp, 2014) that MOOCs have caught the imagination of the community at large since they seem to promise universal access to free higher education. In addition, they offer goals of open access to a profound educational experience with minimal entry requirements. However, these concepts were not favourable at that time as the conventional teacher-centred face-to-face educational system was much preferred.

A recent study in the United Kingdom discovered that the findings insights into course design characteristics that practitioners found beneficial in fostering engagement (Griffiths et al., 2021). It also aids in the facilitation of bridging, personalisation design, and community development. Constructed themes reveal how participants organised and negotiated their MOOC experiences and how they navigated and utilised course content. The study's findings further offer insight into how the digital genre for professional development could be structured to encourage involvement and greater issues to how pedagogy is conceptualised and practised online. Though the global situation is as mentioned earlier, in the Sri Lankan context, MOOC based teaching-learning is the least favourable option. This study expects to find out the feasibility of conducting teacher training using MOOCs as it is a time saver for most teachers and provides them to learn at leisure. Hence, the research questions are as follows:

- Do they have the minimum infrastructure facilities needed to work with MOOCs?
- Up to which level do teachers possess to work with digital devices and software used in online learning?
- What is the attitude of the teachers on using MOOC based teacher training for teachers' professional development?

Review of Literature

Research related to teachers in Uganda (Oyo et al., 2017) pointed out that teachers' digital literacy is an important factor as teachers do not only influence students' access to e-resources but are directly responsible for the development of e-resources. However, for Uganda, the small number of active computer literate teachers is responsible for the low volume and quality of educational e-resources. In the context of the initial MOOC implementation, the digital literacy of in-service teachers was considered more important. The results of a study conducted in Spain simultaneously (Cabero & Barroso, 2016) reveal the need to stress the technical aspects and the pedagogical and content knowledge, which is where the respondents earned the lowest scores. In the following year, a study in the UK (Mohamed & Hammond, 2018) revealed that all courses corresponded to the idea of MOOCs, wherein they run on a model of instructional design. However, the course materials varied regarding media use of networking, discussion forums and degree of openness. All MOOCs used formative approaches in terms of assessment, all had automated responses, but only some had summative and peer assessments.

In his research, Misra (2018) found that, despite the benefits, teachers are still hesitant or ignorant about using MOOCs for professional development. As a result, both the teaching community and policymakers need to be educated on new policies and practices to encourage the use of MOOCs for teacher professional development. He says that many countries, institutions, and organisations will note and execute the suggested activities to enable the systematic and effective use of MOOCs to support instructors' ongoing professional competence and educational relevance. Moreover, this statement is a positive point to research about the area in the Sri Lankan context as there is an unavailability of published prior research available in this area. A comparative study in Greece concerning a MOOC designed to support Greek-language teachers in secondary-education schools by implementing collaborative writing activities. The results showed that most participants saw this MOOC as a useful tool for improving their pedagogical knowledge and classroom methods and supporting their ongoing professional development (Koukis & Jimoyiannis, 2019). The study of Tømte (2019) might contribute to researchers and practitioners involved in developing and running MOOCs as cross-institutional initiatives. She addresses the diversity of challenges new study models face within educational institutes. It may also be of interest to teacher education departments in charge of continuing education programs, according to her, because it indicates how a MOOC can provide larger numbers of in-service teachers with new educational opportunities.

A Spanish study on MOOCs (Jonatan Castaño-Muñoz et al., 2018) concluded that MOOCs had become an alternative channel for the professional development of teachers. In addition, they show potential to expand the professional development of teachers and remove participation barriers. However, they say that the teacher training with MOOCs is still in its infancy, and their use is not widespread though the research was done not less than five years. They further say that there seems to be a lack of information and knowledge exchange among colleagues at the school level. Only a small percentage find information about MOOCs in their professional context. However, when it comes to knowledge and impressions of MOOCs, the results of another study done in Spain are significantly different (Palacios-Hidalgo et al., 2020). Few surveyed teachers are aware of these courses and, as a result, are unaware of their potential. On the other hand, pre-service and in-service instructors believe that this novel educational method will give them personalised, motivating, and effective training tailored to their particular learning rhythm.

Results of recent research conducted in India (Bordoloi et al., 2020) revealed many challenges to be met while the adoption and development of MOOCs for lifelong learning in India are taken into consideration. Therefore, in India, the existing modes and popularity of digitally delivered education must be justified. Furthermore, a study in the university context in India (Kundu & Bej, 2020) found that MOOCs have successfully met the learning goals of learners and teachers at these State Universities by complementing their traditional learning environment at universities. Meeting the learning goals could provide them with a constant scope for re-skilling and up-skilling; however, participation in MOOCs is low, especially among females, due to a lack of awareness, inadequate infrastructure, and a low completion rate.

Findings of a study conducted in Central California (Phan & Zhu, 2020) indicated that MOOCs served as tremendous resources for multiple learning purposes, evidenced by the information from the participants. Furthermore, the MOOCs' diverse teaching techniques provided excellent experiential learning opportunities for these K-12 pre-and in-service teachers. Furthermore, in a recent study conducted in Turkey by Sezgin (2020), it was discovered that pre-service teachers lack confidence in issues relating to classroom management. Some pre-service instructors' reservations about MOOCs are based on two specific concerns: language barriers and the pricing of certain courses. The participants' overall attitude toward utilising MOOCs for teacher professional

development was determined to be favourable. However, most of the participants were either unaware of or uninterested in MOOCs. The findings of this study could pave the way for the integration of MOOCs into teacher education programs.

A survey conducted with a sample from India, Pakistan, Bangladesh, Afghanistan and Nepal found that structural issues are due to a lack of digital media access and support services (Mathrani et al., 2021). Further, those female students are more often placed lower in the digital divide access scale. Gendered discriminatory rules are evident in cultural behaviours, with female students experiencing more stress due to increased family obligations. Furthermore, according to a study done in the United States (Tang, 2021), learner-content interaction was a predictor of whether or not teachers completed the course and the type of interaction that teachers who completed the course engaged in the most. There are also practical consequences for providing teachers with a good interaction experience and ensuring interaction equivalency in MOOC-based teacher professional development courses.

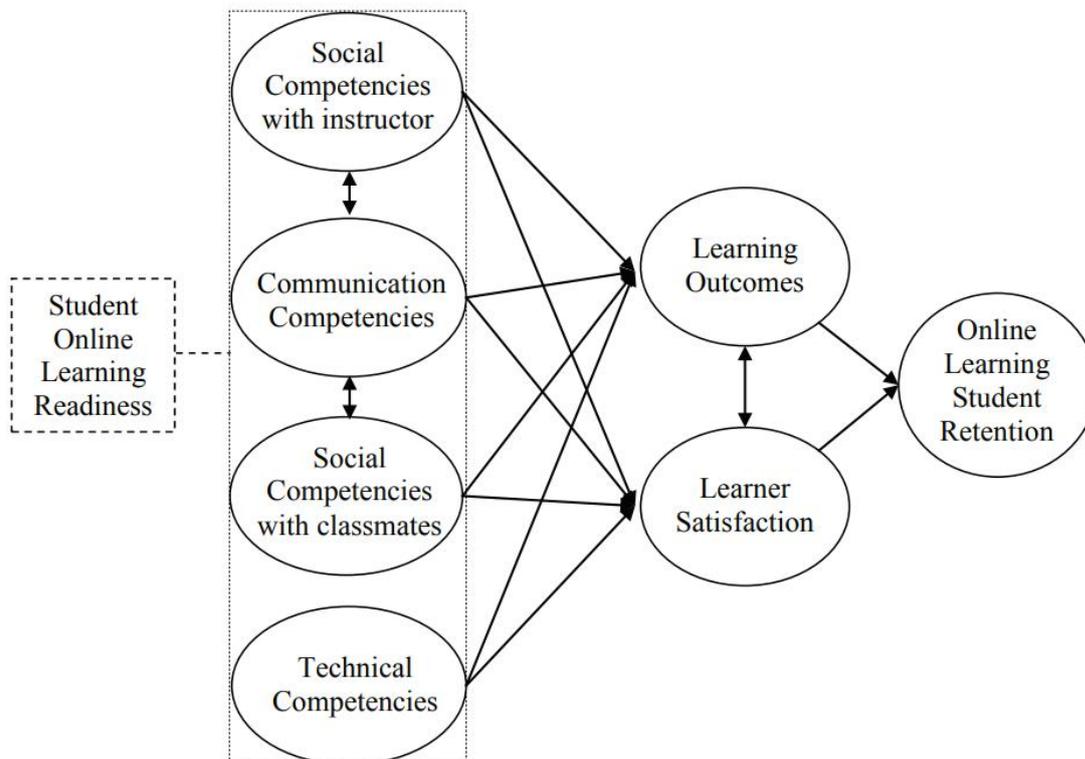
Theoretical Framework

The Student Online Learning Readiness (SOLR) Model (Yu & Richardson, 2015)

The Student Online Learning Preparedness (SOLR) Model includes four important components to assess student readiness for online learning, including social competencies with the instructor, communication skills, social competencies with classmates, and technological skills. In the Student Online Learning Readiness (SOLR) Model, student readiness in online learning, as measured by social competencies with the instructor, communication competencies, social competencies with classmates, and technical competencies, plays a significant role in improving student retention in online learning. This framework has been used for the main theoretical approach as the SOLR model as it shows all the aspects needed to study with the given sample.

Figure 1.

The Student Online Learning Readiness (SOLR) Model

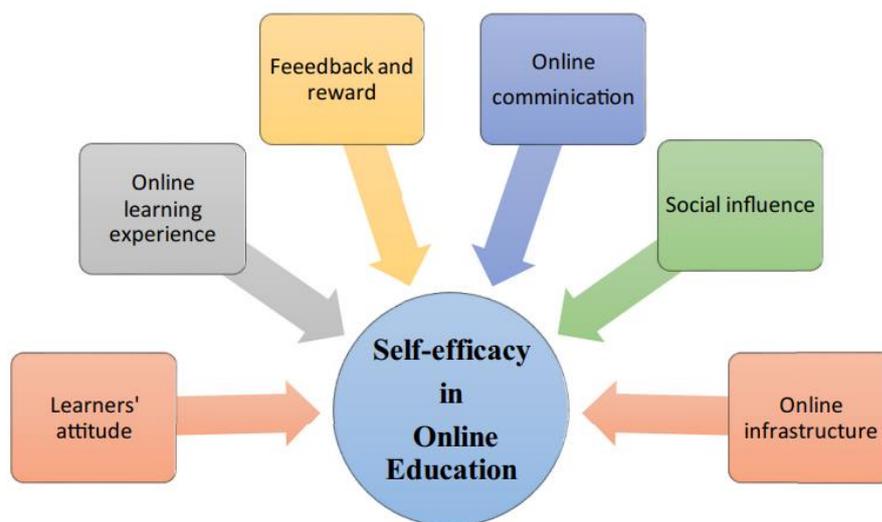


Note: Adapted from *exploratory factor analysis and reliability analysis of the student online learning readiness (SOLR) instrument*, by T. Yu and J.C. Richardson, *Online Learning*, 19(5). (Yu & Richardson, 2015)

In addition to that, the factors that affect online learning, as illustrated in the recent study on *Toward a framework for strengthening participants' self-efficacy in online education* (Kundu, 2020). This framework has been used to investigate the aspects of frustrations discussed in this study. That is because there are many factors related to the smooth operation of online teaching related to the efficiency of the teaching-learning process during the emergency remote online teaching.

Figure 2.

Factors Influencing Self-Efficacy in Online Education (Kundu, 2020)



Note: Adapted from *Toward a framework for strengthening participants' self-efficacy in online education*. *Asian Association of Open Universities Journal*, 15(3), 351–370. (Kundu, 2020)

Research Methodology

Context

Sri Lankan schools consist of government, private and international schools which teach local syllabus (mostly in government and private schools) and Cambridge or Edexcel syllabus. Most teacher training is conducted in face-to-face workshops either in zonal offices or in the National Institute of Education, which is located near the capital city. However, during the COVID-19 pandemic, with the social distancing and lockdown status, there was no possibility to conduct TTP though it was a higher requirement as there was a need to make the teachers aware of the online teaching pedagogy as well as the tools.

Sample

A group of 70 teachers from primary and secondary levels, which belongs to the government, private or international schools aged between 25 years to 60 years were used as the sample. A random sampling method had to be used with total voluntary participation as the questionnaire was distributed over social networking and mobile chat-based applications. However, this survey does not include the teachers who are not connected using mobile or social media services. The sample consisted of 44 females and 26 males.

Instrument and data analysis

Participants' feedback was collected using a questionnaire based on google forms. Besides the questionnaires, telephone or mobile app-based interviews with the teachers and in-service advisors were used for data collection. It contained questions to get the information about the devices and the internet connection, their literacy using the device, software and tools. In addition, information about the tools they used to conduct online classes and the attitude and expectation of having online training was inquired.

Results and Discussion

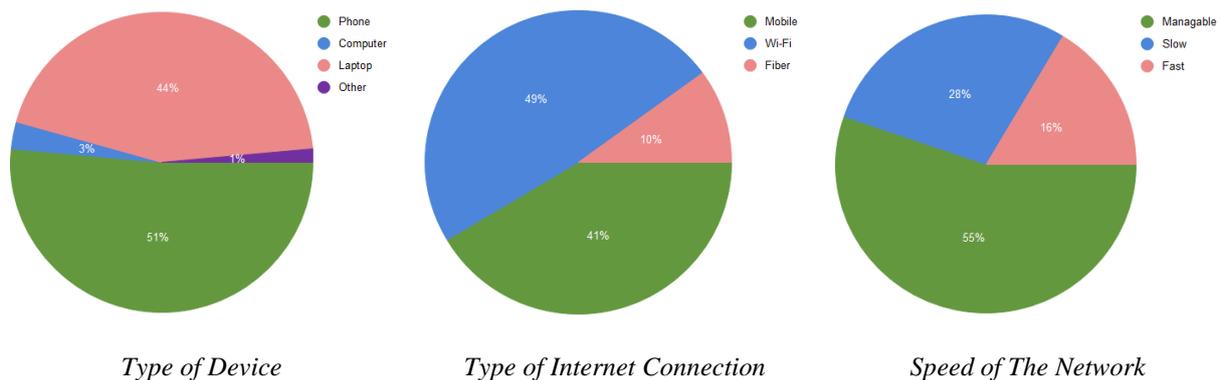
Do they have the minimum infrastructure facilities needed to work with MOOCs?

As Figure 3. Illustrate, most of the sample teachers use their mobile phones to access and conduct online learning sessions (51%). However, the main issue with the device is that mobile phones are not reliable devices for longer TTP due to battery life and screen size. In the next level of the study, there is a need to find out the type and version of the mobile phone as it would be important in designing the video content for the TTP. As shown in Figure 3, internet connection seems to be a deciding factor when implementing training programmes with video content as the experience for most Sri Lankans during the pandemic time was slow network. As pointed out by Mathrani et al. (2021) in their study in Nepal, there are infrastructural issues due to a lack of digital media access and support services; in this study, too, the issue with the network service would be a barrier for delivering rich video content in proposed TTP.

On the other hand, as Kundu & Bej (2020) expressed, inadequate infrastructure is one of the issues for lack of participation in MOOCs. There seems to be a risk to have that kind of a situation in the planned TTP, too, as there is a chance of lesser participation when the teachers realise that mobile device is not the appropriate choice for longer online sessions. On the other hand, there is a need to consider the 41 per cent of the teachers using mobile internet facilities. Moreover, 28 per cent of those mentioned that they have a slow internet connection.

Figure 3.

Teachers' Responds Related to The Device, Internet Connection and The Speed of The Network



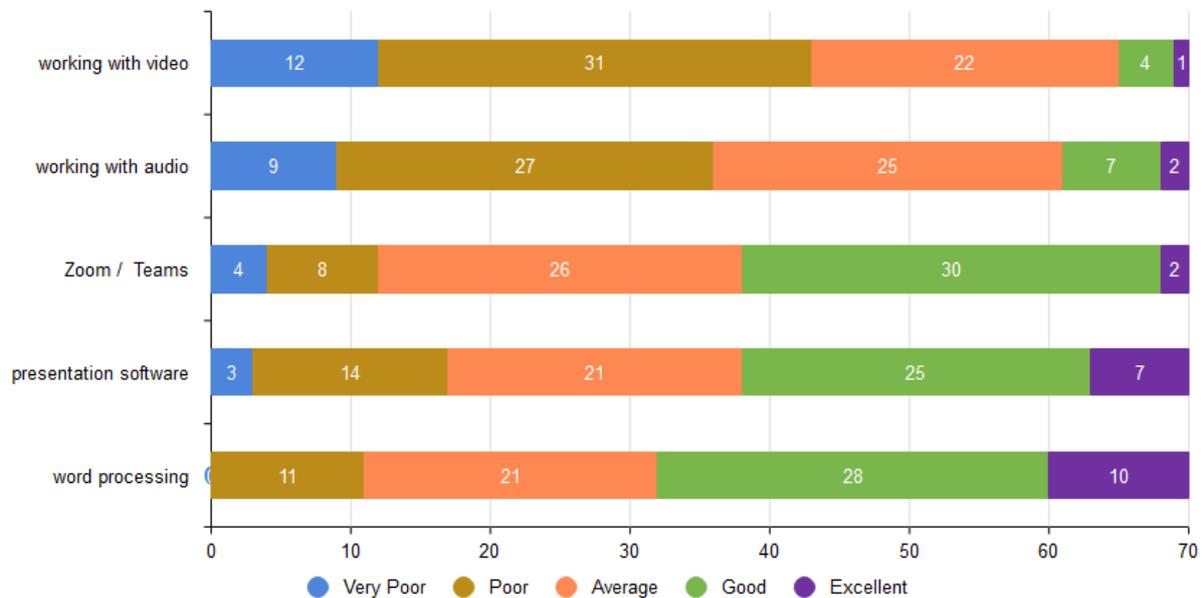
What level of knowledge do the teachers possess to work with digital devices and software used in online learning?

The results revealed that many teachers know to use word processing, presentation, and Zoom or Teams apps used in online sessions, as shown in Figure 4. That is a positive aspect of implementing MOOC based training, and it is revealed in several studies mentioned in the literature review (Cabero & Barroso, 2016; Kundu & Bej, 2020). As those authors pointed out, there is a need for pedagogical and content knowledge, and technological awareness and participation in MOOCs are low due to a lack of awareness. The sample requests online assignments (69%) related to what they would learn using the MOOCs. Therefore, it is necessary to give them assignments that can be done with the basic computer knowledge mentioned earlier because their knowledge of working with audio and video is low, as shown in Figure 4.

As they have requested to improve their knowledge in audio and video related lessons, as special modules of the MOOC, that knowledge can be included as it would benefit the teachers. As revealed in the study in Uganda (Oyo et al., 2017), teachers' digital literacy is an important factor as teachers do not only influence students' access to e-resources but are directly responsible for the development of e-resources. Therefore, the low competency in handling multimedia components could not be considered unimportant, and that is an area to consider in the long term.

Figure 4.

Teachers' Competency on Basic Computer Knowledge Needed for Successful Online Session

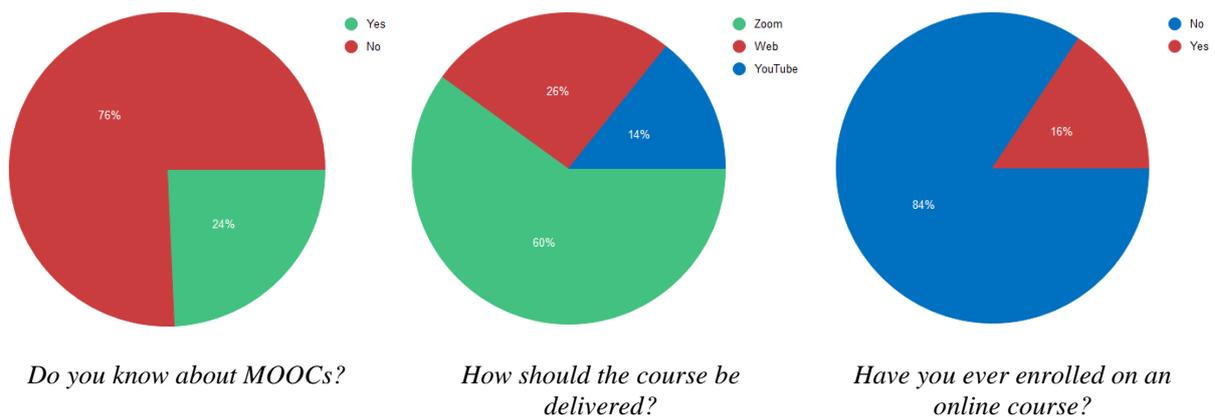


What is the attitude of the teachers on using MOOC based teacher training for teachers' professional development?

The most important finding could be that about 76 per cent of the teachers even have never heard about MOOCs (Figure 5), and that may be since MOOCs are not a favourable choice as most of the time, teacher training is done in the form of physical workshop sessions. Another observation is that most have given consent that they like the TTP, which might be because they have no idea about the nature of MOOCs, which are generally web-based. Their response partly confirms this assumption as to whether they have ever enrolled on an online course. Only 16 per cent of the sample has prior experience with online courses.

Figure 5.

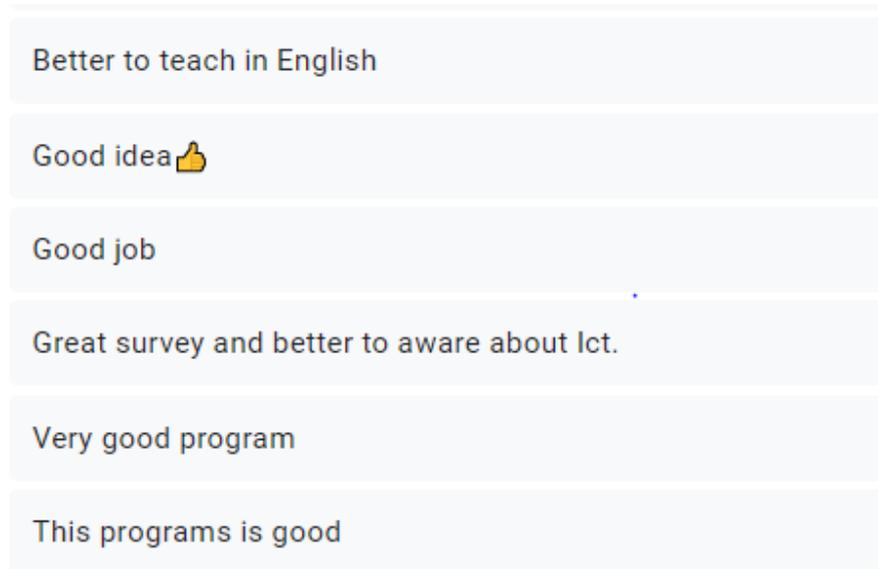
Teachers' Responses for Knowledge on MOOCs, Mode of Delivery and Prior Experience with Online Courses



Concerning their attitude, almost 70 per cent were willing to have assessments to improve their knowledge, and 81 per cent requested a certificate on completion of the online TTP. In addition, their comments show that they are motivated. Most importantly, some have expressed that they have never been given such an opportunity. However, they were willing to improve their knowledge but had no time to attend a separate in-person course with the time restrictions on personal commitments and work schedules. A randomly selected section of their comments is shown in Figure 6.

Figure 6.

Teachers' Comments on Proposed Teacher Training Programme via MOOCs



Conclusions

It can be concluded that the teachers possess that that provides basic infrastructure facilities which are needed to initiate a MOOC based TTP. However, though a minimum infrastructure level is available, it is necessary for constant observations about the dropouts and finds out whether the reason for dropouts is an infrastructural issue. Concerning Kundu & Bej (2020), the only issue that can be an obstacle is the slow network, but the teachers can use the off-peak time to work with the MOOCs to solve that issue in that way. Concerning the literacy on the software and apps, there is a need to programme at least a few sessions that make the teacher upskill their basic literacy in Information Technology. However, as Palacios-Hidalgo et al. (2020) stated, there is an issue that most teachers are not aware of MOOCs, and that must be an important point to consider. Therefore, the developers of the MOOCs should have a good awareness of the functions and possibilities, which could yield more results.

Limitations and Recommendations

The major limitation is the lack of activeness of the teacher to respond to the survey. That may be due to the country's present political and economic instability, where the people struggle for the essential goods due to the scarcity and the high impletion rates. As this is a novel experience for most teachers, there is a need to have continuous observations and keep track of dropouts to see the reasons behind dropping from the programme. There should be a survey of the teachers' mobile devices as it is important in developing multimedia content for the TTP, if necessary.

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