

QUALITY OF MOOC FOR TEACHERS' PROFESSIONAL DEVELOPMENT: PARTICIPANTS' PERCEPTION

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ABSTRACT

Massive Open Online Courses (MOOCs) for teachers' professional development (TPD) are being considered as a new avenue through which huge number of teachers can be given professional inputs and skills enhancement training with lesser efforts and in an economical way. In a country like India, where nearly 1.5 million teachers are engaged in teaching-learning in higher education institutions and universities, no formal mechanism can fulfil the professional development need. Government of India, started TPD programmes through its vertical ARPIT on its MOOC platform SWAYAM in 2018. In past two cycles, nearly 0.2 million teachers have got benefitted with it. To ensure the quality of such TPD programme, analysis and assessment of various TDP programmes is essential. Keeping this need in mind, the researcher has conducted the study and collected perception of 101 higher education teachers who have completed at-least one TPD programme on MOOC on six quality dimensions. The findings are suggesting that many aspects of quality are still missing from many MOOCs being offered for professional development of teachers. Teachers are showing their readiness to consider MOOCs as a mode for their professional development, it is responsibility of the MOOC providers (institutions and course instructors) to ensure the quality of MOOC by considering various dimensions of quality.

Keywords: TPD-MOOC, Professional development, Quality of MOOC

INTRODUCTION

Massive Open Online Course (MOOC) have evolved as the new buzz world in education system in the past one decade as the year 2012 marked as 'year of MOOC' (Pappano, 2012), and gaining popularity day by day. In the development of MOOC, Open Educational Resources (OERs) have contributed massively and they are also gaining equal importance and visibility with MOOCs (Bozkurt, Koseoglu, & Singh, 2019; Dalsgaard & Thestrup, 2015), as many MOOC are using quality learning material already available as OERs. MOOC can be considered as an extension of online courses, characterized by massive enrolment and open access via the Internet (Baker, and Passmore, 2016) and "free" to many people—as in "free to students". These days, MOOCs are being offered almost at all levels of education ranging from school education to higher education. Professional development MOOC is another important dimension added to it. MOOC can address the need of teacher professional development (TPD) largely as they have potential to connect teachers all around the world using online open courses (Larry, 2013). (Mohammad and Bibi, (2017) argued that using MOOC for teacher's professional development is a kind of win-win situation for both teachers and MOOC. A high-quality content for teacher professional development is accessed for free and teachers assist the extension of MOOC to new user base. Despite of it, many researchers have highlighted the importance of MOOC for professional development of teachers.

MOOC FOR TEACHER'S PROFESSIONAL DEVELOPMENT

In a country like India, within a huge system of education from primary to tertiary level, millions of teachers are engaged in teaching learning process. In order to enhance their skills and providing them continuous content as well as pedagogical updation, no established traditional face-to-face system can get success. As per an estimation there are around 9.5 million teachers are in school education and around 1.5 million in higher education in India. In such a situation, providing teachers with an opportunity to have professional self-enhancement options on a sustainable and continuing basis is a big challenge (Misra, 2018). There is lack of consistency in professional development opportunities for teacher in all developing countries including India, as they face historical and systematic inequity in access to professional development (Robinson, 2008). In such a situation MOOC is an effective alternative. MOOCs can be a relatively perfect medium to professional development of teachers in many ways (Choy, Chen, and Bugarin, 2006). It is expected from teachers to keep themselves updated with advancements in pedagogy and technology (Kumari, 2016). There are teachers who can not find opportunities for professional development due to lack of time and other responsibilities. The flexibility of MOOC in time and location fills this gap (Wei, et. al., 2009). The flexibility in curriculum and adaptability according to the situation is another important feature, which gives MOOC a significant venue to help teachers with their professional needs according to the circumstances and students' needs (Choy et al., 2006). MOOCs offer the opportunity to explore, collect, generate and develop new knowledge and skills (Sezgin, 2020). Learning through MOOC built a net of professional development with members from the entire world (Hongbo, 2012; Weigu, 2013; Mohammad and Bibi, 2017).

The discussion is clearly highlighting not only the important features of teachers' professional development through MOOCs but also expanding the horizon of opportunities for teachers' professional development. In India, there have been a lot of experiments of using MOOC for the continuous professional development (CPD) of teacher in school as well as in higher education during past few years. There are teachers using many MOOC courses available on various MOOC platforms like edX, Coursera, FutureLearn, etc. But before 2016, many such efforts were either at individual level or restricted to very small groups due to institutional efforts. With the launch of an India MOOC platform named *Study Waves of Active-learning for Young Aspiring Minds* (SWAYAM) in 2016, by the Government of India, use of MOOC has gained momentum and popularity both. In order to fulfil the CPD needs of teachers in higher education, Ministry of Education (the then Ministry of Human Resource Development) established nearly 75 National Resource Centers (NRCs) and mandated these institutions to offer CPD programmed in various fields of higher education using SWAYAM platform in online mode in 2018. Some teaching-learning centers (TLCs) established under *Pandit Madan Mohan Malviya National Mission for Teachers and Teaching* (PMMNMTT) were also asked to do so. A new designated vertical of SWAYAM was developed as *Annual Refresher Programmes in Teaching* (ARPIT) was developed as a major and unique initiative of online professional development of higher education faculty using the MOOCs platform SWAYAM (NMTT, Government of India, 2018). Most of these courses were of 40-hour duration self-paced courses. Total duration was given 04 months. In the Second cycle in 2019, the number of NRCs was reduced to 48 only. The objective of scheme was to cater professional development needs of nearly 1.5 million higher education faculty but in two cycles i.e., in 2018-19, 51769 faculties and in 2019-20, 153655 faculties (Source: <https://nmtt.gov.in/institute/arpit>) have been benefitted with the scheme.

RATIONALE OF THE STUDY

As there was a gap between expected number of teachers i.e., 1.5 million to get benefitted with the scheme, and the teachers who actually get benefitted with it (nearly 0.2 million), this triggers the need of an analysis of courses being offered on ARPIT. There is also a good number of teachers, who prefer to complete MOOC available on other MOOC platforms also. Despite of associated professional incentives, the rate of completion is also very low, which is actually in the tune of international trends of MOOC completion rate. There are some established benefits and reasons due to which teachers prefer MOOC for their professional development like MOOCs give a solution to fix two major hurdles of training: cost and time (Marquis (2013)). It supports the development of a much larger teaching workforce (Van de Poël & Verpoorten, 2019). Teachers' Professional Development through MOOC develops teachers' four competencies i.e., pedagogy, professionalism, personality, and social (Misra, 2018). MOOC work as an alternative platform to illustrate, keep up, and assess their profession proficiency for teachers (Mary and Steve, 2006). But the success of a MOOC depends on many factors, mostly related to its quality. The accomplishment of MOOC also relies upon its adequacy in teacher professional development (Ken, 1999). How effective the professional development of teachers through MOOC is, it depends how well the MOOC is being planned, presented, executed and connects with the teachers. An urgent need was felt by the researcher to access the MOOCs being offered under ARPIT for professional development and on other platforms, which has motivated the researcher to undertake the study.

THE STATEMENT OF THE PROBLEM

In order to analyse the quality parameters of the MOOCs being offered under ARPIT scheme on SWAYAM and other MOOC platforms, researcher decided to study the perception of teachers, who have participated in any TPD course being offered and completed it. The perception of teachers was collected on some pre-decided parameters of quality standardised by Palmar College (2012) in the name of "*Online Course Best Practices Checklist*". Thus, the statement of study was summarized as "*to study the quality of MOOC for teachers' professional development: participants' perception.*"

OPERATIONAL DEFINITIONS

Quality: Quality is a very subjective term and can be defined in various ways by different people and organization depending upon the aspects/criteria to be considered. For the present study, criteria of Quality of a MOOC are based upon "Perceived Quality Checklist for MOOC" developed by the researcher. The major aspects of the quality considered in the study are: course information, course organization and presentation, appearance of the course, interactivity in course, technology-friendliness, and assessment strategies.

MOOC: MOOCs are generally considered as Massive Open Online Courses, which are freely available for learning purpose and use internet as medium. For the present study, MOOCs are considered as the online courses offered by various NRCs and TLCs on SWAYAM platform of Government of India under ARPIT scheme or on other MOOC platforms.

Teachers' Professional Development: The term Teachers' professional development is being used to refer a kind of specialized training, or advanced professional learning to facilitate teachers for improving their professional knowledge, competence, skill, and effectiveness.

Participants' perception: In the present study, the participants mean the teachers teaching in higher education institutions of India and completed at-least one MOOC for their professional development. The perception is the response of such teachers on various items associated with the six major quality dimensions considered for the study.

OBJECTIVES OF THE STUDY

In order to analyze the professional development programmes in various quality aspects as per the perception of the participant teachers, who have completed any TPD-MOOC, following objectives have been framed:

- To identify the preferred MOOC platform for professional development among teachers
- To explore the preferred nature and duration of professional development programmes through MOOC
- To analyze teachers' professional development MOOC on various quality aspects identified by the researcher.

DELIMITATIONS

- The study is delimited to the teacher educators only and not to other disciplines.
- The study considered only those respondents as participants who have completed at-least one SWAYAM-ARPIT or any other MOOC for professional development.
- The "Perceived Quality Checklist for MOOC" developed by the researcher has used the idea given in the *Online Course Best Practices Checklist (2012)*.
- The delimitation of the data collection is that only online mode data collection was done.

RESEARCH DESIGN

Research Method: The research method of the present study is a survey research, in which post-facto perception of the participants was collected using a self-made tool named "Perceived Quality Checklist for MOOC".

Population and Sample: Population for the present study may be considered as the teachers who have participated in any MOOC on SWAYAM-ARPIT or other platforms for their professional development. But the details and contact of all these were not possible to trace for the researcher as contact details are available only with the course coordinators. The researcher decided to collect the data from the teacher educators, who have completed any MOOC for available for TPD courses, so the sampling frame was delimited to those teacher educators, who have completed such courses. The TOOL link was circulated through Google Groups and WhatsApp groups of teacher educators to find out such participants, as direct contact was not possible. Total 281 responses were collected using Google Form link, out of which only 101 have reported that they have completed any MOOC being offered for TPD. So, these 101 MOOC participants are considered as sample for the study.

Tool for data Collection: For assessing the quality of MOOCs being offered for TPD, researcher utilized the aspects and criteria used in a standard quality check list developed Palmar College (2012) in the name of *Online Course Best Practices Checklist (Palmar College, 2012)* to develop a modified tool based on inputs given in the checklist in the name of "Perceived Quality Checklist for MOOC". The tool is having two sections. Section one pertains to demographic information, section two pertains to the quality aspects considered in the study. There are six aspects of quality in the tool namely: course information, course organization and presentation, appearance of the course, interactivity in course, technology-friendliness, and assessment strategies. Items in the tools are of mixed type. Total 27 items were used in the tool to collect the information.

ANALYSIS AND INTERPRETATION OF DATA

The data collected through online google form has been analyzed section-wise by the researcher. The demographic details are showing that, 73% of the respondents are having Ph.D. as their qualification. 55.9% are from the age group 35-44 years followed by 27.8% from the age group 45-60, and 15.3% from the age group 25-34. 67.3% of the participants are working as assistant professors, 11.4% as associate professors and 11.4% as professors. This reflects that most of the young assistant professors are preferring MOOC as an alternative for their professional development. MOOC are not being received with same interest in higher cadres and elder faculty members.

The data of section two has been analyzed aspect wise, so that perception of participants can be analyzed on various aspects on quality of MOOC.

Aspect 1: Course Information

Under the first aspect, information was collected on dimensions like preferred MOOC platform, duration, nature and type and essential assessment component involved for certification/completion. The analysis of the data is as follows:

Preferred MOOC platform: The first dimension of the aspect was the MOOC platform, which learners have used to complete their MOOC. As there are many platforms available for TPD, researcher has given choice of four most popular ones among with an option other. The responses are shown in the chart below:

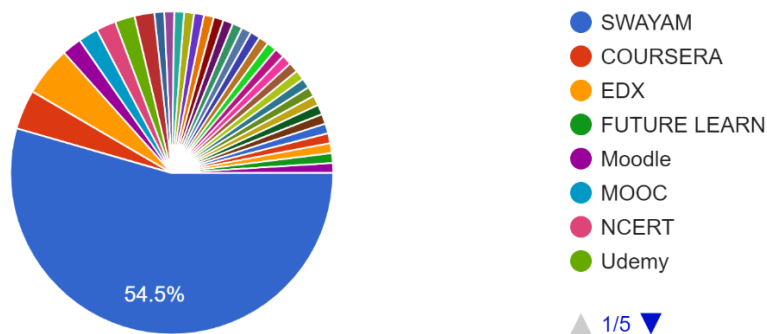


Figure 1: The Preferred MOOC platform

The responses in figure 1, are clearly indicating that in India, SWAYAM is preferred by 54.5% participants. Though there are many platforms available like Coursera (used by 4%), Edx (used by 5%), Udemy (used by 2%) platforms. The data also reflecting that many participants does not have clear understanding what a MOOC platform is. Many have reported names of various Learning management systems (LMSs) and MOOC offering institutions under others category. This proportion is about 34.6%, who have mentioned such information. The analysis suggests that for teachers’ professional development (TPD) in India, MOOC is the most preferred platform. No other platform is near to it. But it also suggests that even in teachers, a good number is of such teachers who do not know, what a MOOC platform is, though they have completed a course.

Duration of the Course: Another important feature of any MOOC is the duration. It has been observed worldwide that for professional development, short term MOOCs are being preferred. In order to get insight from participants in India, this item was kept in tool. The responses are varied as shown in figure 2:

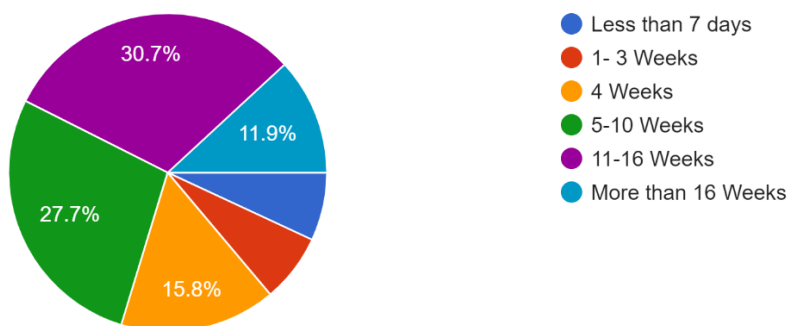


Figure 2: Duration of TPD MOOC

The figure is reflecting that maximum number of learners have completed TPD MOOC of 11-16 weeks duration, i.e., 30.7%. the reason for this is that most of the MOOC for professional development available on SWAYAM-ARPIT are of 12 to 16 weeks duration. 27.7% participants have reported that they have completed courses of 5-10 weeks duration followed by 15.8%, who have completed the course of 4 weeks duration and a significant number is of those, who have completed even the courses of longer duration i.e., 11.9% for more than 16 weeks. Other two options i.e., 1-3 weeks and less than 1 week are also completed by 6.9% each. The findings are suggesting that there is a huge variability in terms of duration of the MOOC courses.

Nature of MOOC: There are a variety of MOOC available on various platforms ranging from awareness, information to certificate, diploma and degree. Therefore, it was an important item to know the nature of MOOC preferred by teachers, their responses were as shown in figure 3.

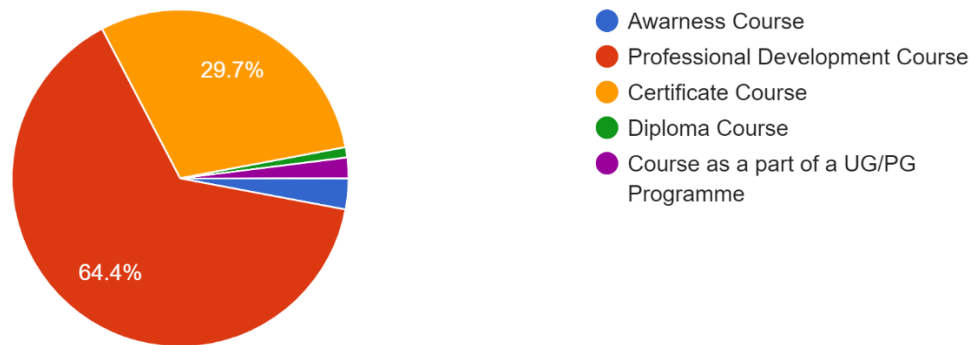


Figure 3: Nature of MOOC

The pie-chart in figure 3 is indicating that most of the teachers (64.4%) have preferred a MOOC for their professional development. MOOCs for TPD are very popular across the world. Though nearly 29.7% have preferred the MOOC leads to certificate level. 3% have preferred awareness level programme whereas only 1% have preferred diploma or degree level courses. This finding is in tune with the finding of many researchers who asserted that MOOC is a good tool for professional development and is being accepted by the teachers.

Type of Essential Assessment Component: As a part of course information, participants were also asked to talk about the nature of essential assessment component of the MOOC they did.

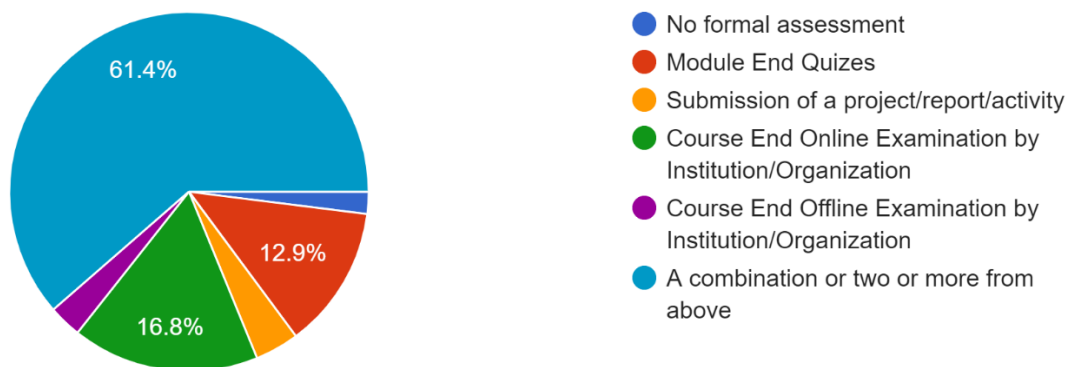


Figure 4: Nature of Essential Assessment Component

The responses on this aspect are giving an insight that most of the learners (61.4%) have completed the courses in which there was no formal assessment. As per the response of 16.8% participants, there was a component of terminal assessment and according to 12.9%, there were components like submissions of projects/ reports/ activities. This reflects that flexibility in assessment strategies is a key feature of MOOC and teachers prefer the courses in which they do not require to appear in any formal examination. Contrary to it, most of MOOC available under SWAYAM-ARPIT require a terminal examination. This may be reason that only nearly 20% teachers have opted for this option for their professional development in India.

Aspect 2: Information about the Course

The information being provided to learners about the MOOC are an important quality aspect. If a MOOC provided all necessary information on its announcement/introductory page, it attracted more learners and ensures their sustainability. Researcher asked the participants to choose the information available on the home page of the course, they have completed. Total 15 dimensions have been listed under this category. Finding on the aspect have been tabulated below in the table 1.

S. No.	Quality Dimension	N	%
1	Name of Course	99	98.02
2	Target Audience	73	72.28
3	Duration of Course	92	91.09
4	Course Structure	92	91.09

5	Syllabus of Course	72	71.29
6	Course Objectives	86	85.15
7	Brief Description of the Instructors	73	72.28
8	Instructional Process to be followed	71	70.30
9**	<i>Instructors' contact Details</i>	57	56.44
10*	Duration for which Instructors will be available	39	38.61
11**	<i>Details of Compulsory Activities</i>	63	62.38
12*	Details of Optional Activities	32	31.68
13**	<i>Grading Mechanism</i>	59	58.42
14	Certification Process	73	72.28
15*	Validity of Certificate	46	45.54

Table 1: Information available on Home page of the course

The data tabulated in table one is reflecting that information related to name, duration, and course structure was available with more than 90% of the courses. 85.15% participants found course objectives also. More than 70% (ranging between 70.30% to 72.28%) participants found information regarding target audience, syllabus, brief of instructors, instructional process, and certification process. These all are essential information, which every course should have, if these are not available with 100% courses, it means, there is serious quality laps on the part of course instructor/coordinator.

Surprisingly the quality assurance information like instructors' availability, details of activities given optional (i.e., not for assessment purposes), certificate validity are some areas (***marked as bold in the table**), which are missing from most of courses. Nearly 40% responses are telling that important components like instructors' details, details of compulsory activities to be completed and grading mechanism was also missing (****marked in italics in the table**). These findings are showing that course developers need to look on their home page more seriously all information, which can facilitate learners to sustain and retain in the course should be placed there.

Participants were also asked about the content organization of the course; the responses are shown in the figure 5.

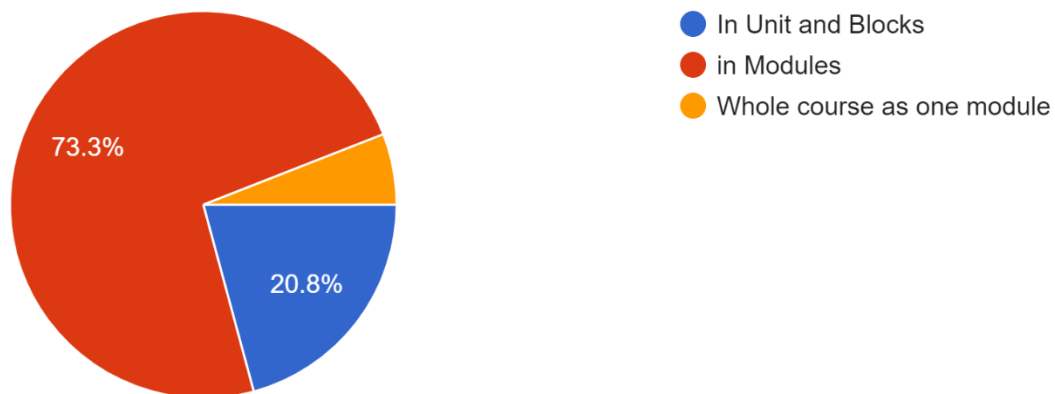


Figure 5: Content Organization of the MOOC

Figure 5 is indicating that 73.3% participants found the content organization in modular form, which is an idea format for MOOC course across the platforms. 20.8% participants reported the content organization in their course in units and blocks, which is a traditional ODL format, being replicated in online in some courses and 5.9% have reported that whole content was given as one module. This is not considered as a good practice in MOOC, and a very low percentage of respondents have reported it.

Aspect 3: Course Organization and Presentation

Under this aspect, eight essential features related to organization and presentation of a MOOC have been listed and participants were asked to tick, which they found in the course completed by them. Their responses have been tabulated in table 2.

S. No.	Quality Dimension	Yes (%)	No (%)	Sometimes (%)
1	All essential components were available on dashboard.	90.10	7.92	1.98
2	It was easy to navigate to different sections of the course.	84.16	10.89	4.95
3	Connections between various sections and subsections was clearly stated and understandable.	82.18	11.88	5.94
4	Content was presented to learners in small chunks (e.g., sections, subsections, etc.)	86.14	10.89	2.97
5	Module/activity/Course completion timeline was stated clearly.	89.11	8.91	1.98
6	Those who can't learn with the pace of course, some additional time to complete the activities was given to learners.	66.34	*28.71	4.95
7	Each module/unit/section has its linkage with clearly stated course objectives.	84.16	10.89	4.95
8	All the links for content stored on any other platform/repository were working.	74.26	17.82	7.92

Table 2: Aspects of Content Organization and Presentation

On these quality dimensions most of the respondents have given their courses yes, only on the aspect of availability of additional time for learners, 28.71% participants have reported that this aspect was missing in their MOOC. All the eight quality aspects are essential for any MOOC. If it is a TPD MOOC, their presence must be ensured by the course developers/coordinators.

Aspect 4: Appearance of the Course

Items under this aspect are related to course presentation on web portal. Some people call it aesthetics. Participants have been asked to examine the MOOC completed by them on the eight quality dimensions as mentioned below in table 3.

S. No.	Quality Dimension	Yes (%)	No (%)	Sometimes (%)
1	Dose Course has its own specifically designed course page with course banner?	83.17	12.87	3.96
2	Was selection of fonts, colour of text and background soothing to the theme of the course?	69.31	6.93	23.76
3	Was there enough information as text?	84.16	3.96	11.88
4	Was course having more than required images on course page?	23.76	61.39	14.85
5	Were information sections available on course page well organized?	87.13	4.95	7.92
6	was there any kind of spelling or grammatical error on course page?	14.85	71.29	13.86
7	Was there any extra information on course page, which may not be needed there?	13.86	76.24	9.90
8	Was the length of course page was appropriate to accommodate all necessary information?	80.20	7.92	11.88

Table 3: Quality Dimensions of Course Appearance

The responses tabulated above are indicating that on aesthetics parameters, most of the participants responded positively. It is quite satisfying that MOOC being offered as professional development courses are taking care of almost all quality dimensions prescribed worldwide.

Aspect 4: Interactivity in the Course

In any MOOC, interactivity is one of the key quality indicators. A good MOOC included learner-learner, learner-instructor, and learner-content interactivity. When participants have been asked about the clear communication of what are the essential expectations/requirements from the learners? 80.1% learners have responded positively on the item.

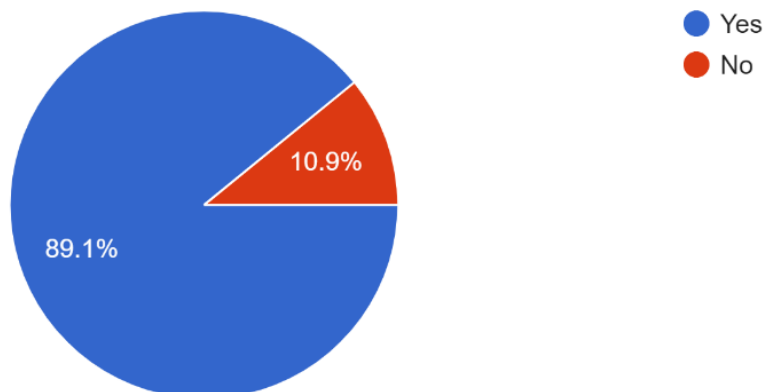


Figure 6: Clarity in Communication about Essential Requirements

82.2% learners (Figure 7) have responded that e-mail was the key communication tool in their MOOC and they were able to interact with the instructor through e-mail.

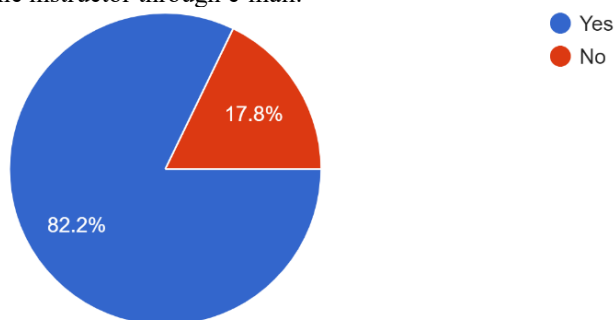


Figure 7: Using e-mail for Interaction

Most of the learners (88.1%) were receiving all important information/announcement through e-mail, though they have also indicated that response from instructors was not so frequent. Figure 8 is indicating that according to 44.6% of participant, they were receiving the responses in expected time, 35.6% were receiving it sometime and 19.8% have not received any response from the instructors.

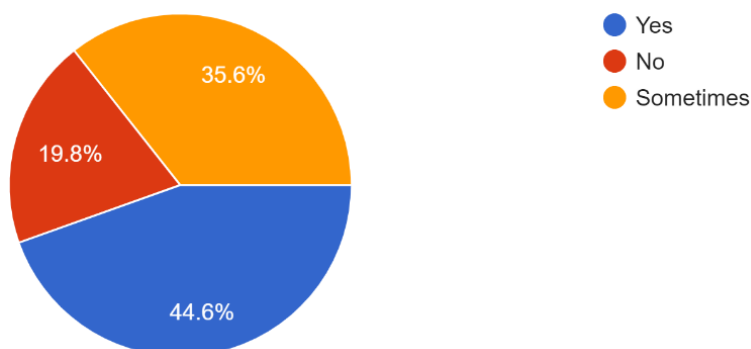


Figure 8: Responses on mail from Course Instructors

These findings reflect that though e-mail is being used as a medium of communication and interaction, but responses from instructors are as per expectations. The role of interactivity can't be denied in success of any MOOC; therefore, course instructors need to focus on this quality aspect.

If in a MOOC, there are provisions of continuous assessment, quizzes, activities, exercises, the grading and feedback on activities is an essential quality feature. On this dimension, as shown in figure 9, 68.3% participants have responded that they were receiving the grades/feedback on time, 19.8% have answered it as sometimes, and 11.9% have never received the grades/feedback on time.

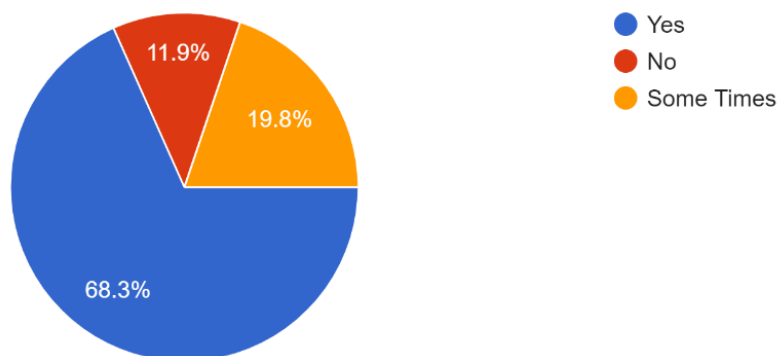


Figure 9: Frequency of Grade/feedback

Participant teachers were also asked to reflect on use of various elements of interactivity in the MOOC completed by them. They were asked to mark their responses on four levels i.e., most frequently, frequently, rarely and never. Their responses have been tabulated in table 4 as shown below.

S. No.	Quality Dimension	Most Frequently (%)	Frequently (%)	Rarely (%)	Never (%)
1	Discussion Forum	37.62	34.65	18.81	8.91
2	Live Interactive Class	10.89	22.77	37.62	28.71
3	Live television-based discussions	6.93	5.94	34.65	52.48
4	Quizzes and other assessment strategies	52.48	30.69	11.88	4.95
5	Online Group Activities	20.79	20.79	30.69	27.72
6	Learner initiated Peer Interaction	23.76	22.77	35.64	17.82
7	Instructor initiated Peer Interaction	21.78	27.72	31.68	18.81
8	Chat Sessions	24.75	28.71	33.66	12.87
9	Mobile SMS	20.79	13.86	27.72	37.62
10	Social Media	22.77	26.73	20.79	29.70

Table 4: Tools use for interactivity in the Course

The responses of the participants in various TPD MOOCs are reflecting that discussion forums and quizzes were most frequently used tools for interactivity. In some of the courses, use of social media and peer-interaction and chat sessions were also used. Innovative ways for interaction like live interactive sessions, television-based sessions, peer interaction (instructor lead and learner initiated, both), online group activities, etc., were not practiced/used by many course coordinators. These are tools, which can be used for enhancing quality of interactivity.

Aspect 5: Technology Friendliness

As MOOCs are being offered in online environment, the technology being used to deliver the content and interactivity, is also a quality dimension. It ranges from the format used to deliver e-content, source of content and information, various e-tool integrated in academic transaction, etc.

When learners were asked about the main format used to provide e-content of the courses, as shown in figure 10, 89.1% found content in .pdf format, 74.3% in .mp4 videos, 36.7% in form of .doc/.docx/.rtf text file, 23.8% as audio files, 18.4% as .flv videos and 23.8% as .html document.

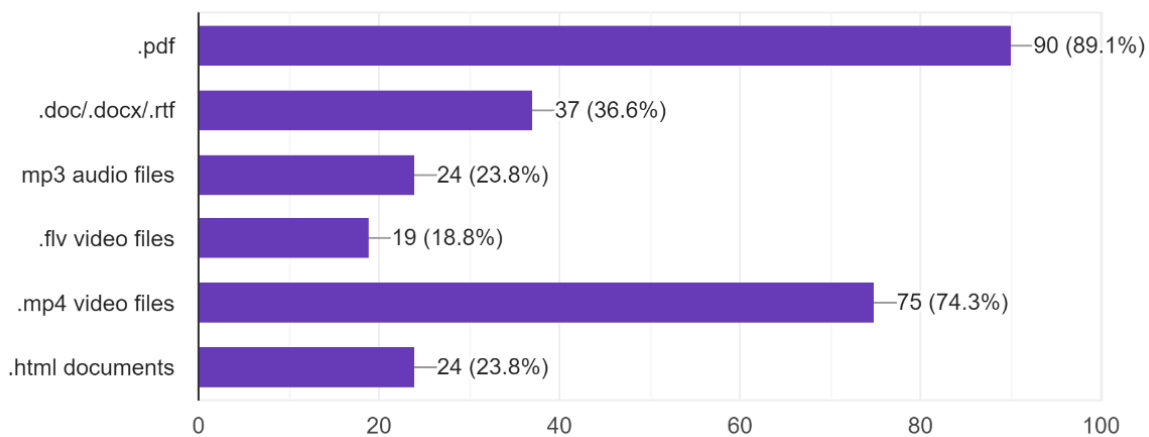


Figure 10: Format of e-content

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he finding reflects that .pdf for e-text and .mp4 for videos are most preferred formats for content delivery. Whereas, some course coordinators have used some varied formats like .mp3 audio files or .html files as well. It has been found that use of variety of formats help in reaching out to more learners. Participants have also informed about the placing of content in a MOOC. As shown in figure 11, 79.2% have found all the material available on course webpage only, 55.5% have found audio/video files at some other places with links, 24.8% have found only e-text on course page and in case of 23.8% respondents, social media was also integrated on webpage.

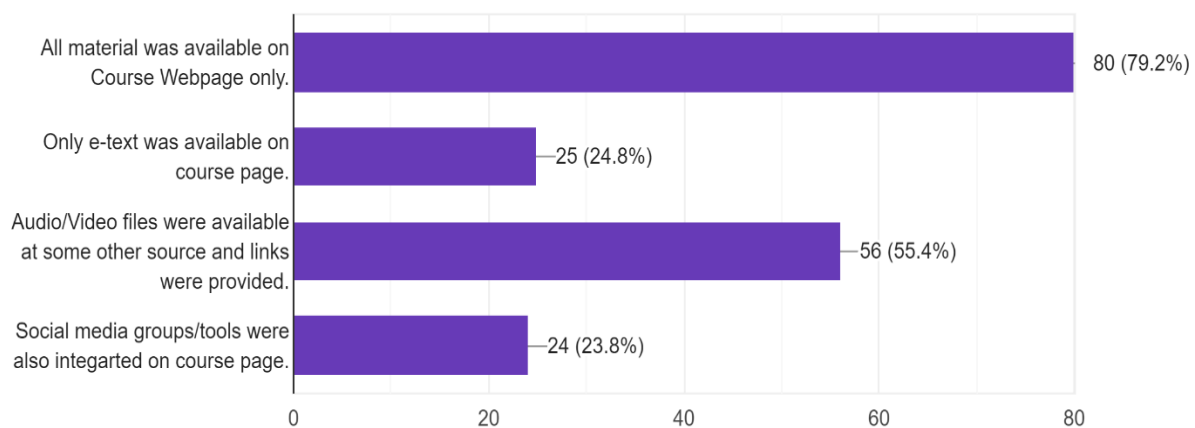


Figure 11: Placing of e-content in Course

Participants were also given option to choose the e-tool used for interaction and activity in their MOOC programme. As there is no limit of such tools, only some popular options (eighteen) were given to them and they were asked to add, if they wish to add more.

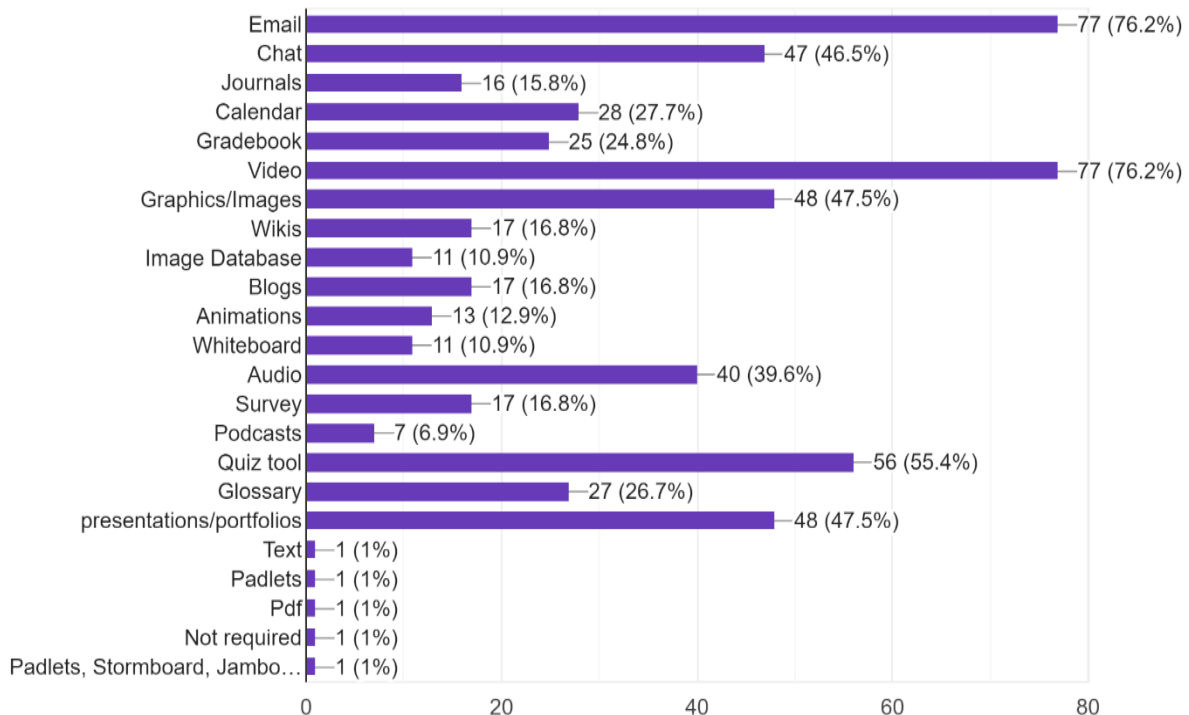


Figure 12: e-tool used in MOOC

The graphical representation in figure 12 reflects that e-mails, videos, quiz, presentation, graphic, chat were the tools used in the course of the most of (45 to 74.2%) the respondents. In some cases (25 to 45%) audio, calendar and glossary were also used. Other tools were not used so frequently. As there is no dearth of tool now, course coordinators need to identify the tools other than the essential and common one to increase the interactivity and engagement of participants in the MOOCs.

Aspect 6: Assessment Strategies in the Course

The quality of any MOOC is also depending upon the variety of tools and strategies used for assessment. As the respondents were teachers and courses have been meant for their professional development, using variety of assessment strategies also motivate and prepare participants to use variety of assessment tools in their teaching-learning practices as well.

In the first item under this aspect, participants were asked to identify the assessment strategy used in their MOOC. The figure 13 is showing a clear-cut distinction between the strategies used and not used so frequently.

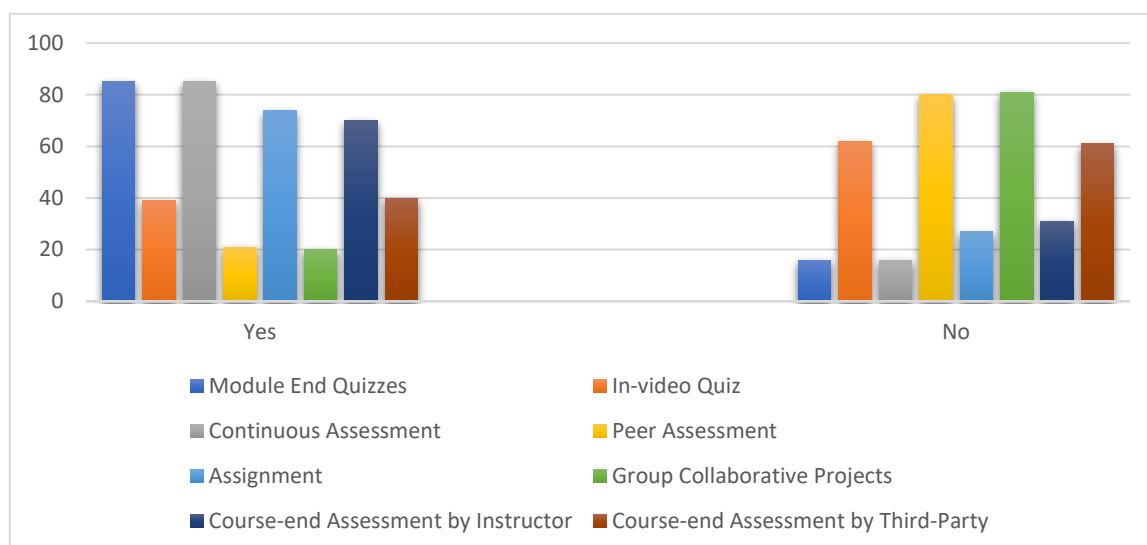


Figure 13: Assessment Strategies used in MOOC

It can be noticed from figure 13 that strategies like Module end-quizzes, continuous assessment, assignment and course-end assessment by the course instructors have been preferred in the MOOC as compared to in-video quiz, peer assessment, group collaborative projects and course end assessment by the third party. This finding indicates that course coordinators have preferred the traditional assessment strategies over the innovative one in most of the cases. To enhance quality, along with essential assessment components, some innovative strategies should also be adopted.

S. No.	Quality Dimension	Yes (%)	No (%)	Not Applicable (%)
1	Was examination form filled online?	61.39	10.89	27.72
2	Was there any examination fee involved?	21.78	48.51	29.70
3	Was examination online at your place?	48.51	20.79	30.69
4	If it was not at your place, was it assigned by examining body?	39.60	17.82	42.57
5	Were you able to download the examination schedule in advance?	65.35	8.91	25.74
6	Was examination password protected?	60.40	9.90	29.70
7	Was it an objective type test?	78.22	3.96	17.82
8	Were all learners provided with separate systems?	62.38	3.96	33.66

Table 5: Quality Dimensions related to assessment in MOOC

The responses gathered and tabulated in table 5 are reflecting the nature and process of assessment used in MOOC. As the adaptability and flexibility is a key quality dimension, it should be reflected in every component of the MOOC and assessment is one of those. Most the participants (more than 60%) have reported that their examination forms were filled online, examination scheduled was available in advance, examinations were password protected, it was objective type, and separate systems were provided to all learners. There was not found any significant variability on this aspect in the study.

FINDINGS OF THE STUDY

The analysis of data related to perception of various participants about various quality dimensions of a MOOC being used for professional development of teachers gives a very significant insight about the course being offered and also suggests the ways for improvement in future courses. Major findings of the study are:

- SWAYAM is the most preferred platform in India for teachers; professional development through MOOC.
- Most of the teachers prefer courses of smaller duration and not the degree/diploma types longer duration MOOC.
- Home page of the MOOC should have all essential information organized systematically, if something is missing or not clearly mentioned it leads to dropout from the course and participants did not get clarity.
- Apart from the designated time to complete the activities, some additional time should also be given to the learners to complete their activities. It helps in increasing retention and completion rate.
- Innovative ways for interaction like live interactive sessions, television-based sessions, peer interaction (instructor lead and learner initiated, both), online group activities, etc., are not being practiced/used by many course coordinators, these should be integrated along with traditional methods to enhance the quality of the MOOC.
- Use of variety of formats to provide e-content help in reaching out to more learners and fulfilling the learning needs of learner with different learning styles.
- Course instructors/coordinators need to identify the tools other than the essential and common one to increase the interactivity and engagement of participants in the MOOCs.
- In various TPD MOOCs, assessment strategies like in-video quizzes, peer assessment, group collaborative projects and course end assessment by the third party, may be integrated along with the traditional assessment strategies to enhance the quality of MOOC.

Conclusion and Discussion

Quality of TPD-MOOC is an essential quest for future success of MOOC. The findings of the study are suggesting that many aspects of quality are still missing from many MOOCs being offered for professional development of teachers. Teachers' professional development is in itself a setup and developing exploration field (Evans, 2002).

MOOC adds more flavour of quality, content updation and skill enhancement to it. Thus, there is a lot of scope of improvement in design, delivery and assessment in MOOCs being offered for professional development. Hillary (2010) added to it that “still there is a lot of work to improve the situation the readiness of expert, reasonable and convenient teacher training courses”, because MOOCs provide chance to teachers to be accessible with the updated knowledge through web (Mohammad and Bibi, 2017). There is need for more exploration and experimentation in the areas of teachers’ professional development MOOCs as, the utilization of MOOC in TPD is still in the exact stage, and trial information investigation is required to additionally examine (Ian, 2014). The best part about TPD though MOOC is that teachers receive high quality professional self-development and enhancement content for free (Jobe, Östlund, & Svensson, 2014) through it. Using MOOCs for professional development enables teachers to make themselves a part of a global learning community and motivate them (Vivian, Falkner, & Falkner, 2014). Thus, it can be concluded that Findings of the research are in tune with the related studies worldwide and reflecting that teachers are showing their readiness to consider MOOCs as a mode for their professional development, it is responsibility of the MOOC providers (institutions and course instructors) to ensure the quality of MOOC by considering various dimensions of quality.

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