Research Article

Massive Open Online Courses: Awareness, Readiness and Preferences of Pre-service Teachers

Zahra Kazmi[1] & Syedah Fawzia Nadeem[2]

[1]Research Scholar, Department of Teachers Training & Non-Formal Education (IASE), Jamia Millia Islamia, New Delhi

Email- kazmizahra110@gmail.com, rs.kazmizahra110@jmi.ac.in

[2]Professor, Department of Teachers Training & Non-Formal Education (IASE), Jamia Millia Islamia, New Delhi

Abstract

A MOOC (Massive Open Online Course) is an online course that can be accessed by an unlimited number of participants dispersed geographically. Although MOOCs are in trend for the past few years, a lot of concerns are being raised because of the high enrolment rate, but low completion rate. One of the major reasons for this difference in enrolment and completion rates can be the lack of readiness of participants in using MOOCs. This study attempts to explore the pre-service teachers' readiness in using MOOCs. An online questionnaire was used to collect data from 159 pre-service teachers of Delhi/NCR universities. The collected data was analysed through MS Excel. Descriptive statistics were used to analyse the data for final interpretation. The results revealed that although many pre-service teachers are aware of MOOCs, only a few of them have used them yet. Most of the pre-service teachers are found to have the technological accessibility required for using MOOCs but some of them still lack computer peripherals like headphones or microphones, which may be required during the course. The findings also reveal that pre-service teachers' competence level was higher than their motivation level. In addition, it was also found that those who are ready for MOOCs still prefer face-to-face more over online or remote involvement.

Keywords: MOOCs, awareness, readiness, preferences, pre-service teachers

Introduction

With the advancement of technology, the way of teaching and learning has changed. MOOC is a platform through which learning materials can be accessed free of cost and if anyone wants to go for certification, a minimal amount is charged to them for the same. These courses can be accessed from anywhere, at any time, but the only prerequisite for using such courses is to have an internet connection.

MOOCs are a relatively new trend in the educational scenario. MOOCs were first introduced in 2008 and emerged as a popular mode of online, distance learning in 2012 (Carey, 2012). MOOCs are considered one of the major thrust areas under the Digital India Campaign launched by the Government of India. SWAYAM (Indian MOOC) was first announced in August 2014 and since its beta launch in July 2017, it has enrolled over 10 million learners (Shah, 2020). The European Association of Distance Teaching Universities (EADTU, 2015) defined MOOCs as "online courses designed for a large number of participants, can be accessed by anyone anywhere as long as they have an Internet connection, are open to everyone without entry qualifications and offer a full/complete course experience online for free".

According to Chan et al. (2019), these courses are massive because a large number of students can join the course; they are open because students can access the course materials at no cost; they are online because through the internet these courses are delivered. MOOCs are available to students to supplement their learning and personalized learning environments, and the use of learning analytics is set to transform education (Fadzil et al., 2016). MOOCs also help individuals to gain education from top universities, and the best faculty even when they have not been able to physically present there (Morris, 2014).

Kpolovie and Iderima (2016) state that, learners come into the MOOCs platform having different characteristics which may impact their learning and their level of readiness is one of those characteristics. They further claim that learners' lack of readiness can negatively impact the teaching and learning process and hence to take maximum benefits from such online courses, the readiness of the learners is important as they have to be ready to learn for effective learning to take place.

MOOCs readiness is defined as the minimum requirement of what learners should know and do to maximize the benefits of using MOOCs (Subramaniam et al., 2020). Readiness for learning is a holistic way of assessing learners' learning preparedness. Readiness embraces the interrelationships between skills and behaviours across domains of development and learning (UNICEF, 2012). These can be seen as minimum standards of what the learner should know and be able to do to be successful in his learning. Measuring MOOC readiness can be likened to identifying the prerequisites to the MOOC's enrolment, which is based on required competencies that would enable a student to pursue a course and complete the associated learning tasks. (Loizzo et al., 2017)

Previously conducted studies on MOOCs claim that there are certain challenges that MOOC participants face. According to Zulkifli et al. (2020), there are eight types of challenges they identified in their study namely, internet/Wi-Fi coverage sources, understanding of MOOC usage, MOOC usage equipment, student commitment, student motivation, MOOC materials, allocation of grades and course offerings in MOOC. MOOCs have also been criticized for their low completion rates (Thakur, 2018). People find out about MOOCs through social media, blog posts, or internet surfing and enroll in just a few minutes but they soon fall behind or forget to log in to the course from the beginning (Subramaniam et al., 2020). A study conducted by Loizzo et al. (2017) revealed that while the respondents valued MOOCs for professional development and lifelong learning, they had full lives with other priorities such as family, career, school, and volunteerism, so when their lives become hectic, MOOC participation was assigned a lower priority.

In the past few years, many researches have been conducted on the use of MOOCs in different disciplines but in teacher education, there are very limited studies available, in India and abroad. Therefore, this study focuses on exploring pre-service teachers' perceptions regarding MOOCs. The following are the research objectives of this study:

1. To identify the extent of awareness about MOOCs among B.Ed. students of Delhi/NCR universities

2. To understand the perception of pre-service teachers towards their readiness in using MOOCs concerning Technology Access, Competence, and Motivation

3. To identify the preferences of pre-service teachers regarding the implementation of MOOCs in their university

4. To identify the barriers and challenges faced by pre-service teachers in using MOOCs

Methods and Materials

Population and Sample

The population of the study consists of all the pre-service teachers enrolled in Delhi/NCR universities. A random sampling technique was used to collect data from pre-service teachers. Therefore, the sample of this study involved 159 pre-service teachers of Delhi/NCR.

Tools and Techniques

A "MOOC Readiness Questionnaire" developed by Prof. Dr. Mohammad Amin Embi in 2014, for National Higher Education Strategic Plan (Malaysia), was adapted and used by the researcher to collect data from pre-service teachers. The questionnaire included closed ended-questions as well as open-ended questions. The questionnaire consisted of 3 sections: Demographic information; MOOCs awareness and readiness in using MOOCs concerning Technology Access, Competence, and Motivation; Barriers/Challenges in using MOOCs. Five experts from the field validated the questionnaire.

Procedure of Data Collection

The questionnaire was sent to around 600 pre-service teachers enrolled in Delhi/NCR universities. The questionnaire was returned by 183 pre-service teachers, of which 159 responses were usable. The remaining responses were either repeated ones or do not belong to the population of the study, hence their responses were not considered. Descriptive statistics were calculated using MS Excel for final interpretation.

Results and Discussion

In the first section of the questionnaire, the pre-service teachers were asked about their demographic information. It was found that 76.1 per cent (n=121) of them were females whereas, only 23.9 per cent (n=38) were males.

Table-1: Gender of the Pre-service

Gender	Frequency (n)	Percentage (%)
1. Female	121	76.1%
2. Male	38	23.9%

Majority of the pre-service teachers, i.e., 68.5 per cent (n=109) were below the age of 25 years. The pre-service teachers between 25-30 years old account for 28.3 per cent (n=45) whereas, only 5 per cent of them were above 30 years.

Table-2: Age of the Pre-service Teachers (in years)

Age (in years)	Frequency (n)	Percentage (%)
1. Below 25	121	76.1%
2. 25-30	38	23.9%
3. Above 30	5	3.1%

The sample of the study (as shown in Table 3), included pre-service teachers from different universities of Delhi/NCR. It was found that around 42 per cent of the pre-service teachers were from Central Universities, 30 per cent were from State Universities, and around 28 per cent were enrolled in Private Universities of Delhi/NCR.

Table-3: Type of Universities where the Pre-Service Teachers are Enrolled

Type of Universities	Number of Pre-service Teachers (n)	Percentage (%)
1. Central Universities	67	42.1%
2. State Universities	48	30.1%
3. Private Universities	44	27.6%

Table 4 indicates that 70.4 per cent (n=112) of the pre-service teachers' medium of instruction was English, those having Hindi as their medium of instruction constituted 18.2 per cent (n=29) of the sample whereas, 11.3 per cent (n=18) pre-service teachers were from Urdu medium.

Table-4: Medium of Instruction of Pre-service Teachers

Medium of Instruction	Frequency (n)	Percentage (%)
1. English	112	70.4%
2. Hindi	29	18.2%
3. Urdu	18	11.3%

In the next section of the questionnaire, the pre-service teachers were asked about their MOOCs awareness and their readiness in using MOOCs with respect to Technology Access, Competence and Motivation.

MOOCs Awareness

Findings shown in Table 5 indicate that almost half of the pre-service teachers (49 per cent) were aware of MOOCs but they have not used them yet. Around 20 per cent of the pre-service teachers reported that they do not know about MOOCs but they have heard people talking about them and those who are not aware of MOOCs at all also constituted about 20 per cent of the sample. The findings also reveal that only a few of them (11.3 per cent) were not only aware of MOOCs but they have used them as well i.e., participated in one or more MOOCs.

Although MOOCs are in trend for the past few years, it was found that it is still unknown to some students. However, being a future-teacher they need to be aware of such platforms, and therefore, knowledge about MOOCs needs to be provided at both levels i.e., Pre-service Teacher Education as well as In-service Teacher Education.

Table-5: MOOC Awareness

Q. Are you aware of MOOCs?	Frequency (n)	Percentage (%)
1. Aware and have used	18	11.3%
2. Aware but haven't used	78	49%
3. Don't know but have heard people talking about it	32	20.1%
4. Not aware of MOOCs at all	31	19.5%

In the next question, the pre-service teachers were asked to indicate their understanding of MOOCs. They were given the authority to choose more than one option if they want. The responses are depicted in Table 6.

Table-6: Pre-service teachers' understanding of MOOCs

Q. What do you understand by MOOCs? (You may choose more than one option)	Frequency (n)	Percentage (%)
1. An online course aimed at unlimited participation and open access via the web	68	42.7%
2. Massive Open Online Courses	88	55.3%
3. Web-based distance learning program	35	22%
4. MOOCs comprise video lessons, readings, assessments, and discussion forums	53	33.3%
5. MOOCs are in trend due to Covid-19	4	2.5%
6. These are freely accessible courses and the syllabus can be seen even without signing up	1	0.6%
7. Don't know about MOOCs	42	26.4%

It was found that the majority of the pre-service teachers (around 70 per cent) have a basic understanding of the concept of MOOCs. A few of them (2.5 per cent) indicated that MOOCs are in trend because of Covid-19. However, around 26 per cent of the pre-service teachers reported that they don't know about MOOCs. Due to the Covid-19 pandemic when all educational institutions were closed, universities rapidly switched to online mode for conducting classes and assessments so that the lockdown could not become a hurdle in students' learning and their academic session should not be delayed. Since the students were more engaged in digital platforms ever than before, this could have led to an increase in MOOCs awareness and use by them. Yet, from the findings, it was evident that there are several pre-service teachers who are still not aware of MOOCs.

Technology Access

The findings related to the accessibility of a laptop/computer with an internet connection are given in Table 7. The majority of the pre-service teachers (73 per cent) indicated that they have access to a laptop or a computer with an internet connection. However, some of the pre-service teachers (6.9 per cent) reported that they do not have access to a laptop or a computer and some of them (6.9 per cent) also reported that they do not have an internet connection. Furthermore, around 11 per cent of the pre-service teachers agreed that they have access to a laptop/computer with the internet but they face slow internet issues and intermittent disconnections. A few of them (1.8 per cent) also indicated that they do not have a laptop/computer but they have an internet connection in their mobile phone.

Table-7: Accessibility of laptop/computer with internet

Q. Do you have access to a laptop/computer with an internet connection?	Frequency (n)	Percentage (%)
1. Yes, I have a laptop/computer with an internet connection	116	73%
2. No, I don't have a laptop/computer	11	6.9%
3. No, I don't have an internet connection	11	6.9%

4. Yes, but I face slow internet issues/intermittent disconnections	18	11.3%
5. I do not have a laptop but I have an internet connection in my mobile phone	3	1.8%

Concerning the accessibility of laptops/computers with enough RAM to run adequate software like MS Office or Adobe Reader etc (as shown in Table 8), more than half of the pre-service teachers (59.7 per cent) agreed that they have a laptop with enough RAM to run adequate software, some of them (10.7 per cent) indicated that they have access to a laptop/computer with enough RAM but they do not own adequate software like MS Office whereas, 29.6 per cent of them denied having a laptop or a computer with sufficient RAM to run adequate software.

Table-8: Accessibility of laptop/computer with enough RAM to run software like Microsoft Office, Adobe Reader etc.

Q. Do you have access to a laptop/computer with enough RAM to run software like Microsoft Office, Adobe Reader, etc	Frequency (n)	Percentage (%)
1. Yes, I have a laptop/computer with enough RAM to run adequate software	95	59.7%
2. No, I do not have any laptop/computer with sufficient RAM to run adequate software	47	29.6%
3. Yes, I have access to a laptop/computer with enough RAM but I do not own software like Microsoft Office	17	10.7%

To access MOOCs, having a laptop/computer with enough RAM to run adequate software is necessary to access the course materials and for doing the assignment work. In the previous question, some of the respondents (1.8 per cent) reported that they do not have a laptop, but they have an internet connection in their mobile phone. Most mobile phones have this software pre-installed or the students may also install these apps. through Google Playstore or Apple store as well and through this, they can access the course materials available on the MOOCs platform.

When asked about the accessibility of headphones/speakers for the courses, the majority of the respondents (74.2 per cent) reported that they have access to headphones/speakers, and some of them (19.5 per cent) reported that they do not have headphones/speakers while 6.3 per cent pre-service teachers reported that if required, they can arrange a headphone/speakers. Findings are indicated in Table 9 given below.

Table-9: Headphone/Speaker Accessibility

Q. Do you have access to headphones or speakers for courses that may have video conferences or require student-recorded presentations?	Frequency (n)	Percentage (%)
1. Yes, I have a headphone/speaker	118	74.2%
2. No, I do not have a headphone/speakers	31	19.5%
3. If required, I can arrange a headphone/speaker	10	6.3%

If the MOOC provider plans to conduct a live session for the students for clearing their doubts, students may need a microphone for this purpose. From the findings given in Table 10, it was found that the number of pre-service teachers who have access to a microphone (43.4 per cent) was less than those who do not have access to a microphone (46.5 per cent) for the courses that may have video conferences or require student recorded presentations. Whereas, around 10 per cent of pre-service teachers indicated that they can arrange a microphone/recorder if there is such a requirement. Inaccessibility of headphones/speakers could be very challenging for the students as it is required for listening to the audio and video lectures.

Table-10: Microphone Accessibility

Q. Do you have access to a microphone for courses that may have video conferences or require student-recorded presentations?	Frequency (n)	Percentage (%)
1. Yes, I have a microphone/recorder	69	43.4%
2. No, I do not microphone/recorder	74	46.5%
3. If required, I can arrange a microphone/ recorder	16	10.1%

Competence

The pre-service teachers were asked to indicate their level of competence on a 5-point Likert scale, i.e., Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD). The frequency counts, percentage, and mean for each item were calculated for the same, as shown in Table 11.

Table-11: Level of Competence of the Pre-service Teachers

S. No.	Statement	SA	A	UD	D	SD	Mean
1	I have the basic skills to operate a computer (e.g. saving files, creating folders, etc)	82 (51.6%)	61 (38.4%)	10 (6.3)	5 (3.1%)	1 (0.6)	4.37
2	I have the basic skills for finding my way around the internet (e.g. using search engines like Firefox, Safari, Internet Explorer, etc)	67 (42.1%)	67 (42.1%)	13 (8.2%)	12 (7.5%)	0	4.18
3	I think that I would be comfortable using a computer several hours per week to participate in course	39 (24.5%)	66 (41.5%)	38 (23.9%)	14 (8.8%)	2 (1.3%)	3.79

4	I am proficient at sending or receiving emails	80 (50.3%)	63 (39.6%)	15 (9.4%)	0	1 (0.6%)	4.38
5	I am proficient at sending or receiving emails with attachments	74 (46.5%)	63 (39.6%)	17 (10.7%)	4 (2.5%)	1 (0.6%)	4.28
6	I am proficient at typing on a keyboard	48 (30.2)	83 (52.2%)	21 (13.2%)	6 (3.8%)	1 (0.6%)	4.07
7	I think that I would be able to communicate effectively with others using online technologies (e.g. chat)	64 (40.3%)	69 (43.4%)	21 (13.2%)	4 (2.5%)	1 (0.6%)	4.20
8	I think that I would be able to use online tools to work on my assignments	53 (33.3%)	78 (49.1%)	22 (13.8%)	5 (3.1%)	1 (0.6%)	4.11
9	I think that I would be able to ask questions and make comments in clear writing	44 (27.7%)	86 (54.1%)	22 (13.8%)	7 (4.4%)	0	4.05
10	I can work independently	59 (37.1%)	76 (47.8%)	20 (12.6%)	4 (2.5%)	0	4.19
11	I can work in groups	44 (27.7%)	87 (54.7%)	23 (14.5%)	5 (3.1%)	0	4.06
12	I am good at managing/planning my time well	40 (25.2%)	80 (50.3%)	33 (20.8%)	6 (3.8%)	0	3.96
13	I can meet deadlines on regularly	41 (25.8%)	76 (47.8%)	34 (21.4%)	7 (4.4%)	1 (0.6%)	3.93
14	I am comfortable asking for assistance when needed	39 (24.5%)	88 (55.3%)	25 (15.7%)	7 (4.4%)	0	4.0
15	I am good at following directions	48 (30.2)	90 (56.6%)	20 (12.6%)	1 (0.6%)	0	4.16
16	I can learn from various instructional formats (e.g. text, video, podcast, online discussions, video conferencing)	56 (35.2%)	76 (47.8%)	21 (13.2%)	6 (3.8%)	0	4.14

A high mean value (M=4.37) on the statement " I have the basic skills to operate a computer e.g. saving files, creating folders, etc." indicates that many pre-service teachers are competent enough to operate a computer. They also reported that they have the basic skills for finding their way around the internet e.g. using search engines like Firefox, Safari, Internet Explorer, etc. (M=4.18).

To participate in a MOOC, one must spend several hours a week attending the lectures and doing the assigned work. On enquiring, if they would be comfortable using a computer several hours per week to participate in a course, many pre-service teachers indicated positive responses (M=3.79).

With respect to their proficiency, the pre-service teachers reported that they are quite proficient at sending or receiving emails (M=4.38), sending or receiving emails with attachments (M=4.28) and most of them indicated that they are proficient at typing on a keyboard (4.07).

To clear their doubts or, convey messages to the instructors or peers, one needs to be able to use online technologies for effective communication with others. On this, the pre-service teachers reported that they can communicate effectively with others using online technologies, e.g. chat (M=4.20).

The participants of MOOCs must submit their assignments if they want to attain a completion certificate for the course in which they have got themselves enrolled. For this purpose, they need to have basic knowledge of using online tools that would be required for doing the assigned work. A large number of pre-service teachers reported that they would be able to use online tools to work on their assignments (M=4.11).

One of the important features of MOOCs includes a discussion forum for clearing the doubts of the participants. SWAYAM, an Indian MOOC, also has an "online discussion forum for clearing the doubts" as its one of the four Quadrants. Therefore, to ask questions one needs to be competent in writing comments clearly and ask for assistance confidently whenever such a need arises. The pre-service teachers indicated that they would be able to ask questions and make comments in clear writing (M=4.05). Also, they reported that they would be comfortable asking for assistance when needed (M=4.0).

Pre-service teachers who reported that they would be able to work independently (M=4.19) were found to be a little higher in number than those who would be able to work in groups (M=4.06) which means that people tend to be more comfortable working individually than working with peers or in groups.

Many pre-service teachers reported that they are good at managing or planning their time well (M=3.96) and they can meet deadlines on regularly (M=3.93). The learners opt for MOOCs for their professional development and for enhancing their knowledge and skills so, apart from their college work/ school work/ office work, they need to take out several hours from their schedule to attend lectures and for doing the work that has been assigned to them and hence time management plays an important role here.

The findings also revealed that the majority of the pre-service teachers were good at following directions (M=4.16), as reported by them. Many of them also reported that they would be able to learn from various instructional formats, e.g. text, video, podcast, online discussions, and video conferencing (M=4.14).

Motivation

The pre-service teachers were enquired about their level of motivation, on a 5-point Likert scale, i.e., Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D), and Strongly Disagree (SD). The frequency counts, percentage, and mean for each item were calculated for the same, as shown in Table

Table-12: Level of Motivation of the Pre-service Teachers

S. No.	Statement	SA	A	UD	D	SD	Mean
1	In case my query is not answered I think I would remain motivated	24 (15.1%)	78 (49.1%)	40 (25.2%)	15 (9.4%)	2 (1.3%)	3.67
2	I think that I would be able to complete my work even when there are online distractions (e.g. friends sending messages on social media, game notifications, etc)	39 (24.5%)	81 (50.9%)	23 (14.5%)	15 (9.4%)	1 (0.6%)	3.89
3	I think that I would be able to complete my work even when there are distractions in my home (e.g. television, children, etc)	30 (18.9%)	68 (42.8%)	34 (21.4%)	27 (17%)	0	3.63
4	I would describe myself as self-motivated	46 (28.9%)	87 (54.7%)	24 (15.1%)	2 (1.3%)	0	4.11

Many pre-service teachers reported that they would remain motivated, in case their query is not answered (M=3.67) but a relatively low mean on this statement indicates that if participants' queries are not resolved on the priority they may lose their motivation to participate actively and continue with the course till its completion.

Since the participants are not in a formal set-up (brick and mortar setting), the chances of getting distracted while learning online could become a hindrance and they may find themselves a little less motivated to continue working at the same pace. The majority of the pre-service teachers agreed that they would be able to complete their work even when there are online distractions like, friends sending messages on social media, game notifications, etc. (Strongly agree: 24.5 per cent; Agree: 50.9 per cent) whereas, the number of pre-service teachers who disagree with this statement is quite less (Disagree: 9.4 per cent; Strongly Disagree: 0.6 per cent). Some of the pre-service teachers reported that they are not sure about this (Undecided: 14.5 per cent).

Many pre-service teachers agreed that they would be able to complete their work even when there are distractions in their home like television, children, etc. (Strongly agree: 18.9 per cent, Agree: 42.8 per cent). Those pre-service teachers who either disagree (Disagree:

17 per cent; Strongly Disagree: 0 per cent) or, were not sure about this statement (Undecided: 21.4 per cent) were fewer in number than those who agreed. The findings also revealed that a large number of pre-service teachers believed that they are self-motivated (M=4.11).

The overall mean for all the questionnaire items related to competence and motivation of the pre-service teachers were found to be M=4.11 and M=3.82 respectively. This finding indicates that pre-service teachers' competence level is higher than their motivation level. Although most of them were found to be ready in terms of competence, the motivation level among them was relatively low.

In the next section of the questionnaire, the pre-service teachers were asked about their preferences regarding implementing MOOCs in their university. The findings are shown in Table 13 given below.

Table-13: MOOCs Preferences of the Pre-service

Q. If your university plans to implement MOOCs, how much face-to-face (f2f) vs. online would you prefer?	Frequency (n)	Percentage (%)
1. f2f 10% : online 90%	4	2.5%
2. f2f 20% : online 80%	5	3.1%
3. f2f 30% : online 70%	8	5%
4. f2f 40% : online 60%	7	4.4%
5. f2f 50% : online 50%	39	24.5%
6. f2f 60% : online 40%	19	11.9%
7. f2f 70% : online 30%	28	17.6%
8. f2f 80% : online 20%	14	8.8%
9. f2f 90% : online 10%	14	8.8%
10. f2f 100%	11	6.9%
11. online 100%	8	5%
12. Can't say	2	1.3%

Findings revealed that more than half of the pre-service teachers (54 per cent) indicated that if their university plans to implement MOOCs, they would prefer more than 50 per cent of their courses to be conducted in face-to-face mode. However, only 20 per cent of them indicated that they would prefer more than 50 per cent of their course to be conducted online. Some of the pre-service teachers (around 12 per cent) also reported that they would prefer 50 per cent of their course to be conducted in face-to-face mode and 50 per cent through online mode.

The pre-service teachers were asked to indicate their preferences for the teaching content format to be made available online if their university plans to implement MOOCs. The findings are shown in Table 14 given below.

Table-14: Pre-service teachers' preferences of teaching content to be made

Q. If your university plans to implement MOOCs, what format would you prefer the teaching content to be made available online? (You may choose more than one option)	Frequency (n)	Percentage (%)
1. Reading text only (e.g. PDF)	51	32%
2. PowerPoint Presentation only	40	25.1%
3. Audio only (audio recording of teaching content)	18	11.3%
4. Video only (video recording of teaching content)	25	15.7%
5. PowerPoint with Audio (PowerPoint with an audio explanation)	67	42.1%
6. PowerPoint with Video (PowerPoint with video explanation)	66	41.5%
7. Interactive Videos	69	43.3%
8. Animated Videos	38	23.8%
9. Live sessions	68	42.7%

Live Session allows participants to interact with the course instructor and clear their doubts then and there only. Findings revealed that live sessions are one of the most preferred teaching content formats to be made available online for the participants because of their synchronous nature. Therefore, many pre-service teachers (42.7 per cent) reported that they would prefer Live Sessions. Among other most preferred teaching content formats included, "Interactive Videos" (43.3 per cent), "PowerPoint with an audio explanation" (42.1 per cent), "PowerPoint with video explanation" (41.5 per cent) and "Reading text only (e.g. PDF)" (32 per cent). With respect to their preference of meeting the course instructor face-to-face, the pre-service teachers' answers are indicated in Table 15.

Table-15: Pre-service teachers' preferences of meeting the course instructor face-to-face

Q. If your university plans to implement MOOCs, how often would you prefer to meet face-to-face with the course instructor/lecturer?	Frequency (n)	Percentage (%)
1. Daily	32	20.1%
2. Six days a week	1	0.6%
3. Four days a week	1	0.6%
4. Thrice a week	2	1.3%
5. Once a week	97	61%
6. Once every two weeks	9	5.7%
7. Once every three weeks	10	6.3%
8. Once a month	5	3.1%
9. Once a semester	1	0.6%
10. Don't know about MOOCs	1	0.6%

Many of the pre-service teachers (61 per cent) indicated that they would prefer face-to-face interaction with the course instructor at least "once a week", while some of them (around 20 per cent) reported that they would prefer to meet face-to-face with the course instructor on a "Daily" basis. Some of the other responses included a preference for meeting face-to-face with the course instructor "once every 3 weeks" (6.3 per cent), "once every 2 weeks" (5.7 per cent), "once a month" (3.1 per cent), and "thrice a week" (1.3 per cent).

In the last section of the questionnaire, the pre-service teachers were asked about the challenges they faced while using MOOCs or the barriers that restrict them to take up MOOCs and how they would overcome those barriers/ challenges. The findings are depicted in Table 16.

Table-16: Barriers/challenges in using MOOCs

Q. What are the challenges you face while using MOOCs or what are the barriers that restrict you to take up MOOCs? (You may choose more than one option)	Frequency (n)	Percentage (%)
1. Lack of infrastructure	35	22%
2. Lack of technological skills	34	21.3%
3. Short attention span	29	18.2%
4. Problems with website	52	32.7%
5. Lack of interaction	31	19.4%
6. Lack of instant feedback	36	22.6%
7. Lack of instructor presence	20	12.5%
8. Lack of support	11	6.9%
9. Lack of motivation	21	13.2%
10. Time constraints	33	20.7
11. Technological problems	69	43.3%
12. Medium of instruction	13	8.1%
13. Too much strain on eyes	1	0.6%
14. Instructor's lack of certain skills and incompetency	1	0.6%
15. Sometimes the cost of the certificate is too high and to remain motivated one would need a certificate that would help in future also	1	0.6%

The findings revealed that most of the pre-service teachers (43.3 per cent) face "technological problems". Some of the major issues they face, as reported by them, are: "problems with the website" (32.7 per cent), "lack of instant feedback" (22.6 per cent), "lack of infrastructure" (22 per cent), "lack of technological skills" (21.3 per cent), "time constraints" (20.7 per cent), "lack of interaction" (19.4 per cent), "short attention span" (18.2 per cent), "lack of motivation" (13.2 per cent), "lack of instructor presence" (12.5 per cent), "medium of instruction" (8.1 per cent) and "lack of support" (6.9 per cent). Other issues that the pre-

service teachers reported include "Too much strain on eyes" (0.6 per cent), "Instructor's lack of certain skills and incompetency" (0.6 per cent) and the problem of high charge of certification (0.6 per cent). Even if the students are ready for MOOCs, these challenges could restrict them from using MOOCs extensively and this may lead them to drop out from the course in which they have been enrolled.

The present study was undertaken to investigate the level of MOOC readiness among pre-service teachers of Delhi/ NCR. For this purpose, the data about their demography, MOOC awareness and preferences, readiness in using MOOCs (with respect to Technology Access, Competence & Motivation), and challenges in using MOOCs, were gathered and analysed.

Most of the pre-service teachers involved in this study were below the age of 25 years. In terms of gender, females outnumbered males in the study. Also, the majority of the pre-service teachers had English as their medium of instruction. The findings of this study suggest that many pre-service teachers were quite aware of MOOCs but not many have not enrolled themselves in any such courses yet. Although a lot of pre-service teachers are well equipped with internet connectivity and software, some still lack the computer peripherals required to utilize the full extent offered by MOOCs.

It was found that although most of the pre-service teachers were ready in terms of technology access and competence, motivation level among them was found to be relatively low which means that even if a lot of students have technology access and skills required for taking up MOOCs, some of them are still not motivated enough to participate in such courses or to work actively in all the activities till completion of the course.

Findings shown in Table 15 appears that pre-service teachers still trust traditional methods over digitalization. They still prefer face-to-face interactions more than online involvement.

Some of the issues that arise while using MOOCs may restrict the participants from successful completion of the course. Challenges like technological issues, problems with the website, lack of instant feedback, time constraints, etc., are found to be quite commonly faced by the participants. The findings are consistent with Zulkifli et al. (2020). These problems and issues should be known to the MOOC providers so that some measures for improvisation can be taken up by them. The deadlines for submission of the assignments should also be appropriate so that the learner does not feel overburdened due to time constraints. Instant feedback and support would help the students in keeping them motivated to ensure their continuous participation in the course till its completion.

Conclusion

MOOCs have been around in educational scenario for a while due to rapid advancements in technology and the Covid-19 situation have brought it more attention than ever. According to Nath (2019), it is expected that MOOCs will cater towards providing low-cost or almost free education to students of schools and colleges. Based on the literature review it was found that not much research has been performed in India on how ready students are to adopt MOOCs. It was necessary to understand and analyse the awareness and readiness of MOOCs among the current pre-service teachers (future teachers). Therefore, this study was an attempt to find out the extent of readiness of pre-service teachers and it was found that most of them are ready for MOOCs but they still prefer face-to-face over online or remote involvements. Some of the

major challenges that they usually face includes technological problems, the problem with the website, lack of instant feedback, lack of infrastructure, time constraints, etc. These barriers could restrict them from using MOOCs extensively. Therefore, these challenges have to be taken into consideration to increase MOOCs' usability and successful completion rates.

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