Research Article

Deciphering the Reaction of M.Ed. Students towards a MOOC developed at the Institutional Level

Ashutosh Biswal[1] & Shama P Ansari[2]

[1]Professor, Department of Education (CASE), Faculty of Education and Psychology, The Maharaja Sayajirao University Of Baroda, Vadodara, Gujarat

[2]Research Scholar, Department of Education (CASE), Faculty of Education and Psychology, The Maharaja Sayajirao University Of Baroda, Vadodara, Gujarat

Email- shamapar25@gmail.com

Abstract

MOOCs have emerged as an important form of online learning, which continues to be a useful way to reach large numbers of learners without the constraints of geography and time. These are largely self-paced, do not require official enrolment on campus, and are accessible from any device with a reliable internet connection. National Education Policy 2020 also highlights the importance of leveraging the benefits of technology. The policy recommends pilot studies for online education, online teaching platforms, and tools, content creation and dissemination, addressing the digital divide, virtual labs, teacher training, and incentives, online assessment, blended learning models, and so on. The present study is an attempt in this direction to study the effectiveness of a MOOC developed for M.Ed. students in terms of reactions of the students on various components like overall effectiveness, course structure, video lessons, assessments, discussion forums, additional resources, instructors' support, and challenges faced. The study's findings suggested that M.Ed. students found the MOOC interesting, self-paced, and flexible.

Keywords: MOOC, Research Methodology, M.Ed. students, Reaction Scale

Introduction

MOOCs have emerged as an important form of Open Distance Learning. MOOCs stands for a massive open online course. These courses are massive because there is no limit on the enrolment of students in these courses. It is considered open because anyone from anywhere with the internet can access it and it is online because all course components like instruction, testing, and discussions are done online. MOOC can be defined as a course that has no limits on its enrolment may have a set start and end duration, is open for all irrespective of the background, all components are shared online, and has features of video lectures, discussion forums, online assignments and assessments leading to certifications. According to Goel & Goel (2012), "Open Distance Learning through MOOCs has great potential to be infused in teacher education in both pre-service and in-service modes which seems to be a neglected area. Teacher education in India has a slow pace in getting access to modernization and has not yet integrated the technological innovations for transacting education." The researchers in the present study developed a MOOC for student-teacher educators and studied its effectiveness with the help of a reaction scale developed and validated by the researcher. The developed MOOC enabled students to get acquainted with a new learning method, compelling them to use various authentic open

educational resources available online, enabling self-paced and flexible learning among them.

Review of Related Literature

MOOCs is the new revolution sweeping the higher education sector. As per a study conducted by Kaur (2019), the major advantages of MOOCs in higher education are scalability, free education, removal of other constraints of boundaries, job, etc. force professors to improve lectures in the future, and designed to ensure students keep up, bringing people together from different parts of the world and provide many business opportunities of making platforms and collaborating with universities like Coursera and Edx. Ahmed et al. (2017) examined the evolution of MOOCs, their characteristics, and their potential and problems in Pakistan from the perspectives of teachers and students. They concluded that MOOCs inspire students and are very useful for students after graduation who cannot return to universities when being in jobs. Kilgore (2018) did an empirical study on Adult College Student's Perceptions about Learning Mathematics through developmental mathematical xMOOCs and emphasized that MOOC offers an alternative platform for learning for students who are intrinsically motivated and like to work independently. It also offers confidence to students and motivates them to refresh their skills. Latha (2019) included 500 Indian Learners who have completed at least one MOOC course through Coursera, Edx, or Udacity MOOC platforms and found that students in post-graduation have a higher inclination toward studying through MOOCs, where the behaviour is driven by the internal rewards. Sukhbaatar et al. (2018) also explored undergraduates' and high school students' perceptions of MOOCs. They found considered that students consider MOOCs as a learning resource and as a worthy source of knowledge. Salas et al. (2022) studied 122 teachers from the National Autonomous University of Mexico's perception of MOOCs during the pandemic and found that MOOC is a viable solution to transform education. Soffer & Cohen (2015) integrated MOOC at the undergraduate level and listed various benefits like a flexible environment and development of 21st-century skills. Hence, MOOCs are a welcome step that brings immense benefits to various stakeholders of the Indian education system.

Rationale

With 20-26 million children born annually in India, an estimated 700 million to 1.3 billion young people would demand higher education in the next 35-50 years (Kumar, 2018). India's defining challenge and opportunity for the twenty-first century is to provide great higher education and prepare students for their future livelihoods and jobs. Unconventional educational approaches, such as distance and open learning, on-demand education, and other flexible learning models, should be tried and tested, according to a position paper published by NCERT in 2006. For today's youth, flexible systems, futuristic curricula, and a twenty-first-century vocational orientation are necessary. It is critical to persuade the educational system, which has a key role to play in engineering the teaching-learning scenario and making it a more meaningful experience for both teachers and students. MOOC is the answer to all these problems and can provide access to education to any massive population. MOOCs can offer students better and more diversified instruction than individual instructors can offer (Daniel 2012).

Research Questions

The study was comprised of the following research question:

To what extent can MOOCs be effective for professional courses like Teacher Education?

Objectives of Study

1. To develop a MOOC in research methodology for M.Ed. students.
2. To implement the developed MOOC in research methodology on M.Ed. students.
3. To study the effectiveness of the developed MOOC in terms of the reaction of M.Ed. students on the components i.e.:
    - Overall effectiveness
    - Course structure and planning
    - Video lessons
    - Discussion forums
    - Assessment
    - Additional resources
    - Challenges faced
    - Instructor support

Methodology

Research Design

The present study was experimental research. The design adopted was a single group post-test only design. Here, the researcher implemented the designed MOOC on the M.Ed. students' and then immediately after the MOOC ended, the researcher measured students' reactions toward it. As the development and designing of a MOOC is an exorbitant and time-consuming process, trying it out on a small sample is a highly beneficial way of testing its effectiveness before opening it for global use. Hence the researcher adopted this design.

Variables

The independent variable used was MOOC and the dependent variable was students' reaction towards the developed MOOC.

Population and Sample of the Study

The study population was all the students enrolled in two years M.Ed. program in India. A convenient sampling technique was used to select the sample. All the 40 M.Ed. students studying in the Department of Education, Faculty of Education and Psychology, The Maharaja Sayajirao University of Baroda, Vadodara in the first year of batch 2021-2023 were selected.

Research Tool

To study the effectiveness of the massive open online course in terms of the reaction of M.Ed. students a reaction scale was implemented consisting of 35 statements. The reaction scale was a 5-point Likert type of scale.

Developed and Implementation of the MOOC

The researchers developed a MOOC using the WordPress platform. The developed MOOC was divided into three specializations courses on the selected topic of research methodology i.e. introduction to research methodology, type of research methods, and sampling techniques. The students were provided a manual and also given orientation on how the MOOC works. Students then registered in MOOC and started learning on the MOOC with fixed start and end dates. After the implementation, a reaction scale was implemented on the M.Ed. students.

Analysis of Data

As the study was quantitative the statistical techniques were used to analyze the data. The reaction scale was analyzed using frequency, percentage, and intensity index(II). In a Likert scale, the II specifies the exact point of intensity chosen by the sample for each item. It is simple to make a judgment regarding the participants' response to the given statement by converting the data into a single number (Chaudhari, 2016; Khirwadkar. A & Chaudhari. P, 2019; Kothari. C. R, 2004; Lakhera 2017; Kumar, 2016 cited in Lakshmi, 2020).

i. Overall effectiveness

Eleven statements focused on the reaction of M.Ed. Students towards the overall effectiveness of MOOC. The intensity of each statement along with percentage and frequency is given below:

Table-1: Frequency wise (F), Percentages (%), and Intensity Index wise (II) reaction (Strongly Agree-SA, Agree-A, Undecided-UD, Disagree-D, and Strongly Disagree- SD) of M.Ed. students towards Overall Effectiveness of the MOOC.

Sr. No	Statements	SA (F,%)	A (F,%)	UD (F,%)	D (F,%)	SD (F,%)	II
1	Learning Research Methodology through a Massive open online course (MOOC) was interesting.	32 80.0	08 20.0	0	0	0	4.80
2	The MOOC was well structured and planned.	31 77.5	08 20.0	0	01 2.5	0	4.72
3	The instructions provided in every lesson were elaborate.	27 67.5	10 25.0	1 2.5	2 5.0	0	4.55
4	The MOOC helped me to achieve the given course objectives.	25 62.5	15 37.5	0	0	0	4.62
5	Time duration of the course was appropriate.	23 57.5	12 30.0	03 7.5	02 5.0	0	4.40
6	MOOC promotes self-paced learning	30 75.0	9 22.5	01 2.5	0	0	4.72
7	I would like to learn other topics of research methodology through MOOCs	24 60.0	13 32.5	01 2.5	01 2.5	01 2.5	4.45
8	The MOOCs were flexible to learn at my own preferred time.	26 65.0	14 35.0	0	0	0	4.65
9	The MOOCs were user-friendly.	25 62.5	14 35.0	0	0	01	4.55
10	This course has increased my interest in online learning.	29 72.5	9 22.5	01 2.5	01 2.5	0	4.65
11	I would highly recommend this course to other students	30 75.0	08 20.0	02 5.0	0	0	4.70
Average I							4.62

For statement 1, 80 per cent and 20 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.80 for the statement showed that most of the students found it interesting to learn Research Methodology through MOOC. 77.5 per cent, 20 per cent, and 2.5 per cent of students reacted strongly agree, agree, and disagree respectively to the statement 2. The intensity index of 4.72 for the statement showed that most of the students found the MOOC well-structured and well-planned.

For statement 3, 67.5 per cent and 25 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.55 for the statement showed that all the instructions provided in the lesson were elaborate. 62.5 per cent, 37.5 per cent, and 2.5 per cent reacted strongly agree and agree respectively to the statement 4. The intensity index of 4.62 for the statement showed that most of the students found MOOC course objectives achievable.

For statement 5, 57.5 per cent and 30 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.40 for the statement showed that the time duration was appropriate. 75.0 per cent and 22.5 per cent reacted strongly agree and agree respectively to the statement 6. The intensity index of 4.72 for the statement showed that most of the students found the course self-paced

For statement 7, 60.0 per cent and 32.5 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.45 for the statement showed that students preferred learning other topics also through MOOC. 65.0 per cent and 35.0 per cent reacted strongly agree and agree respectively to the statement 8. The intensity index of 4.65 for the statement showed that most of the students found the course flexible.

For statement 9, 62.5 per cent and 35.0 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.55 for the statement showed that students found the MOOC user-friendly. 72.5 per cent and 22.5 per cent reacted strongly agree and agree respectively to the statement 10. The intensity index of 4.65 for the statement showed that MOOCs increased student interest in online learning.

For statement 11, 75.0 per cent and 20.0 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.70 for the statement showed that students will recommend such a course in the future to others.

ii. Course structure

Five statements focused on the reaction of M.Ed. Students towards the course structure and planning of MOOC. The intensity of each statement along with percentage and frequency is given below:

Table-1.1: Frequency wise (F), Percentages (%), and Intensity Index wise (II) reaction (Strongly Agree-SA, Agree-A, Undecided-UD, Disagree-D, and Strongly Disagree- SD) of M.Ed. students towards course structure and planning of the MOOC

Sr no	Items	SA (F,%)	A (F,%)	UD (F,%)	D (F,%)	SD (F,%)	II
1	The course was delivered as outlined in the syllabus.	25 62.5	14 35.0	0	0	1 2.5	4.55

2	The introduction (learning objectives, instructor information, target group, etc.) given at the beginning of this MOOC was clear to me.	30 75.0	8 20.0	2 5.0	0	0	4.70
3	The manual provided to use the MOOC was easy to understand.	27 67.5	10 25.0	1 2.5	2 5.0	0	4.55
4	Badges at the end of each module motivated me to learn more content through MOOC.	27 67.5	9 22.5	4 10.0	0	0	4.57
5	The new platform developed to host MOOCs was well-designed.	27 67.5	12 30.0	1 2.5	0	0	4.65
Average II							4.60

For statement 1, 62.5 per cent and 35.0 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.55 for the statement showed that most of the students found the course was delivered as per the outline. 75.0 per cent, 20 per cent, and 5.0 per cent of students reacted strongly agree, agree, and undecided respectively to the statement 2. The intensity index of 4.70 for the statement showed that most of the students found instruction clear and lucid.

For statement 3, 67.5 per cent and 25.0 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.55 for the statement showed that most of the students found the manual easy to understand. 67.5 per cent and 22.5 per cent of students reacted strongly agree and agree respectively to the statement 4. The intensity index of 4.57 for the statement showed that most of the students found badges motivating. For statement 5, 67.5 per cent and 30.0 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.65 for the statement showed that most of the students found the platform well-designed.

iii. Video Lesson

3 statements focused on the reaction of M.Ed. Students towards the video lessons in MOOC. The intensity of each statement along with percentage and frequency is given below:

Table-1.2: Frequency wise (F), Percentage wise (%), and Intensity Index wise (II) reaction (Strongly Agree-SA, Agree-A, Undecided-UD, Disagree-D, and Strongly Disagree- SD) of M.Ed. students towards video lessons in MOOC

Sr no	Items	SA (F,%)	A (F,%)	UD (F,%)	D (F,%)	SD (F,%)	II
1	Examples used in the videos were relevant to the topics.	34 85.0	5 12.5	1 2.5	0	0	4.82
2	The length of the videos used in this MOOC was appropriate.	20 50.0	18 45.0	1 2.5	1 2.5	0	4.42
3	Interactive videos used in all courses were fun and made the content engaging.	20 50.0	18 45.0	2 5.0	0	0	4.45

4	The language used in the video was simple and easy to understand.	30 75.0	10 25.0	0	0	0	4.75
Average III							4.61

For statement 1, 85 per cent and 12.5 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.82 for the statement showed that most of the students found examples in videos relevant. 50 per cent, 45 per cent, and students reacted strongly agree and agree respectively to the statement 2. The intensity index of 4.42 for the statement showed that most students found the length of videos appropriate.

For statement 3, 50 per cent and 45 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.45 for the statement showed that most of the students found interactive videos engaging. 75 per cent, 25 per cent, and students reacted strongly agree and agree respectively to the statement 4. The intensity index of 4.75 for the statement showed that most of the students found the language used in videos easy.

iv. Additional resources

Two statements focused on the reaction of M.Ed. Students towards the additional resources in MOOC. The intensity of each statement along with percentage and frequency is given below:

Table-1.3: Frequency wise (F), Percentage wise (%), and Intensity Index wise (II) reaction (Strongly Agree-SA, Agree-A, Undecided-UD, Disagree-D, and Strongly Disagree- SD) of M.Ed. students towards additional resources in MOOC

Sr no	Items	SA (F,%)	A (F,%)	UD (F,%)	D (F,%)	SD (F,%)	II
1	The course was supported by adequate additional E-resources in form of YouTube, PDF documents, and articles.	22 55.0	16 40.0	1 2.5	1 2.5	0	4.47
2	All additional resources provided in the course were relevant to the topic.	26 65.0	14 35.0	0	0	0	4.65
Average IV							4.56

For statement 1, 55 per cent and 40 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.47 for the statement showed that most of the students found adequate additional resources in the course. 65 per cent, and 35 per cent of students reacted strongly agree and agree respectively to the statement 2. The intensity index of 4.65 for the statement showed that resources were relevant to the course topic.

v. Discussion forums

There was 1 statement that focussed on the reaction of M.Ed. Students towards the discussion forums in MOOC. The intensity of each statement along with percentage and frequency is given below:

Table-1.4: Frequency wise (F), Percentage wise (%), and Intensity Index wise (II) reaction (Strongly Agree-SA, Agree-A, Undecided-UD, Disagree-D, and Strongly Disagree- SD) of M.Ed. students towards discussion forums in MOOC

Sr no	Items	SA (F,%)	A (F,%)	UD (F,%)	D (F,%)	SD (F,%)	II
1	The discussion forum used in MOOC helped me in collaborating with my peers.	14 35.0	18 45.0	6 15.0	1 2.5	1 2.5	4.07
Average V							**4.07**

For statement 1, 35 per cent and 45 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.40 for the statement showed that most of the students found discussion forums collaborative.

vi. Assessment

There were 3 statements that focused on the reaction of M.Ed. Students towards the assessment in MOOC. The intensity of each statement along with percentage and frequency is given below:

Table-1.5: Frequency wise (F), Percentage wise (%), and Intensity Index wise (II) reaction (Strongly Agree-SA, Agree-A, Undecided-UD, Disagree-D, and Strongly Disagree- SD) of M.Ed. students towards assessments in MOOC

Sr no	Items	SA (F,%)	A (F,%)	UD (F,%)	D (F,%)	SD (F,%)	II
1	Practice multiple-choice questions in each of the courses helped me in revising the content.	24 60.0	15 37.5	1 2.5	0	0	4.57
2	There were adequate quizzes in each course.	24 60.0	12 30.0	2 5.0	2 5.0	0	4.45
3	Lessons in the form of activities made the course engaging	29 72.5	11 27.5	0	0	0	4.72
Average VI							4.58

For statement 1, 60 per cent and 37 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.57 for the statement showed that most of the students found MCQ beneficial to revising the content. 60 per cent and 30 per cent of students reacted strongly agree and agree respectively to the statement 2. The intensity index of 4.45 for the statement showed that most of the students found quizzes adequate in the course. For statement 3, 72.5 per cent and 27.5 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.72 for the statement showed that most of the students found that activities made the course.

vii. Instructors' Support

There were 5 statements that focused on the reaction of M.Ed. Students towards the instructor's support in the implementation of MOOC. The intensity of each statement along with percentage and frequency is given below:

Table-1.6: Frequency wise (F), Percentage wise (%), and Intensity Index wise (II) reaction (Strongly Agree-SA, Agree-A, Undecided-UD, Disagree-D, and Strongly Disagree- SD) of M.Ed. students towards instructor's support in MOOC

Sr no	Items	SA (F,%)	A (F,%)	UD (F,%)	D (F,%)	SD (F,%)	II
1	As the instructor was always available to help students, I never felt lost in the course	35 87.5	5 12.5	0	0	0	4.87
2	The daily progress report shared by the instructor on WhatsApp made me complete the course on time.	39 97.5	1 2.5	0	0	0	4.97
3	Enrolment deadlines and course deadlines (start and end date) were informed in advance.	34 85.0	5 12.5	1 2.5	0	0	4.82
4	Feedback was given by the instructor on the final graded assignments.	18 45.0	17 42.5	5 12.5	0	0	4.32
5	All my queries were answered through WhatsApp by the instructor.	27 67.5	12 30.0	1 2.5	0	0	4.65
Average VII							4.72

For statement 1, 67.5 per cent and 12.5 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.87 for the statement showed that most of the students found the instructor always available to help students. 97.2 per cent, 2.5 per cent of students reacted strongly agree and agree respectively to the statement 2. The intensity index of 4.97 for the statement showed that most of the students found daily progress reports help to them complete the course. For statement 3, 85 per cent and 12.5 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.78 for the statement showed that most of the students viewed that deadlines were conveyed in advance. For statement 4, 45 per cent and 42.5 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.32 for the statement showed that most of the students got feedback on final graded assignments. For statement 5, 67.5 per cent and 30 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.65 for the statement shows that all of the queries of students were answered through WhatsApp.

viii. Challenges encountered

Four statements focused on the reaction of M.Ed. Students towards the challenges encountered during the implementation of MOOC. The intensity of each statement along with percentage and frequency is given below:

Table-1.7: Frequency wise (F), Percentage wise (%), and Intensity Index wise (II) reaction (Strongly Agree-SA, Agree-A, Undecided-UD, Disagree-D, and Strongly Disagree- SD) of M.Ed. students towards challenges encountered in MOOC

Sr no	Items	SA (F,%)	A (F,%)	UD (F,%)	D (F,%)	SD (F,%)	II
1	The final graded assignments were long and took a lot of my study time.	2 5.0	2 5.0	2 5.0	21 52.5	13 32.5	4.02
2	There were lots of disturbances in the audio used in the content video of the MOOC.	0	0	2 5.0	22 55.0	16 40.0	4.35
3	Too much workload was given during each week.	2 5.0	2 5.0	5 12.5	5 12.5	26 65.0	4.27
4	I did not face any major technical difficulties while navigating through MOOCs.	20 50.0	18 45.0	0	1 2.5	1 2.5	4.37
Average VIII							4.25

For statement 1, 52.5 per cent and 32.5 per cent of students reacted strongly disagree and strongly disagree respectively. The intensity index of 4.02 for the statement showed that most of the students did not find assignments too long. 40 per cent and 55 per cent of students reacted disagreed and strongly agree respectively with the statement 2. The intensity index of 4.35 for the statement showed that most of the students did not find any disturbances. For statement 3, 65 per cent and 12.5 per cent of students reacted as disagreeing and strongly disagree respectively. The intensity index of 4.27 for the statement showed that most of the students did not find too much workload in the course. For statement 4, 50 per cent and 45 per cent of students reacted strongly agree and agree respectively. The intensity index of 4.37 for the statement showed the majority of students faced no technical difficulties.

Findings

The developed MOOC was found to be effective regarding the reaction of M.Ed. students towards it. M.Ed. students not only found the course interesting but it increased their bend towards online learning.

Discussion and Conclusion

Majority of the M.Ed. students in the present study had favorable reactions toward the use of MOOCs. Even Lathe (2019) concluded in an empirical study that post-graduation students are more inclined toward MOOCs. The study has proved that students are interested in learning through MOOCs which promotes self-paced and flexible learning among them. Kilgore, (2018), Israel, (2015), Andone & Mihaescu (2018) also emphasised that MOOC is a novel method that promotes self-paced learning. The majority of students found relevant examples in the content video which is in line with the finding of Oakley et al. (2016) listing the factors that create a highly liked MOOC which included easy materials, convenient time, and practical examples in the course, and many more. Aljaraideh (2019) concluded that teachers perceive MOOCs to provide better learning opportunities to students

and recommended higher education institutes introduce MOOCs in their day-to-day learning. Students in the present study also want to recommend others to adopt MOOCs. MOOCs can be a powerful approach to online learning in the future. They provide students and teachers with a lot of opportunities to learn and grow in their profession.

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