Teachers' Attitude Towards Massive Open Online Courses (MOOCS)

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Abstract: Massive open online courses (MOOCs) have received both praise and condemnation in higher education. Massive open online courses (MOOCs) debuted in 2008, and the phenomenon quickly acquired global traction. The present study aims to increase understanding of the effects of MOOCs on higher education and teachers' attitudes towards this emerging type of education by analysing existing research and data. The current study is quantitative, and the survey method of data collection was chosen due to the nature of the study and its demand. The population of the study included all higher education teachers of West Bengal. The analysis shows that there is no significant difference in male and female teachers' attitudes towards Massive Open Online Courses (MOOCs), nor is there a significant difference in teachers' attitudes towards Massive Open Online Courses (MOOCs) based on teaching experience. The major findings show that MOOCs have a positive influence on the attitude of higher education teachers.

Key Words: Massive Open Online Courses (MOOCs), Attitude, Online Education, Male and Female teachers.

INTRODUCTION

Massive open online courses (MOOCs) began their run in 2008, and shortly after they were introduced, the phenomenon gained popularity all over the world. The rapid growth of Massive Open Online Courses (MOOCs) has caused a significant upheaval in higher education institutions. Online education is rapidly expanding globally, including in India. According to WCET (2016), between 2002 and 2016, the number of students participating in "at least one distance education course" grew from 1.6 to 5.8 million. Enrolment in online courses, certifications, and degree programs is increasing as students seek flexible formats for job progression and advanced education. Nowadays, MOOCs play a crucial role as an online learning platform. As the world is becoming too much competitive, the first and foremost requirement survive in this condition is to produce adequate number of trained and technical people (Bairagya & Bagchi, 2021). A new wave of educational innovation that has drastically altered the norm in education has been ignited by the development of MOOCs. Online learning is an approach where teaching-learning is performed from a distance on digital platforms without any physical contact between the students and the teachers. This has changed the entire scenario of the education system (Bairagya et al., 2022). These online learning platforms provide open-access courses to a large number of learners worldwide, often free of cost or at minimal expense. MOOCs are a recent

phenomenon that has led to the development of new trends in higher education (Higher Education Academy, 2015). MOOCs offer a new option for students in cost-sensitive countries like India. Today's generation of teachers is rapidly growing up with different online platforms, and MOOCs have taken the biggest role in that. Teachers in higher education may have different opinions about MOOCs depending on how they see their impact on educational quality. Teachers can benefit from MOOCs in multiple ways, such as enhancing their subject knowledge, improving pedagogical skills, and staying updated with emerging educational trends. MOOCs also offer opportunities for professional development, collaboration with global educators, and exposure to innovative teaching methodologies. By examining teachers' experiences, motivations, and concerns, this research will contribute to the broader discussion on how MOOCs can be effectively utilized to support teachers in the evolving educational landscape. Teachers might appreciate the flexibility MOOCs offer for their skill-building learning new methodologies or subject matter at their own pace—or see them as a way to enrich their students' experiences by integrating external resources. Conversely, negative or skeptical attitudes might stem from concerns about the quality of instruction, the lack of personal interaction, or the perceived threat to traditional teaching roles. This study intends to investigate how teachers feel about MOOCs by looking at what influences their opinions, the advantages and disadvantages of MOOCs, and the research will provide insights into how MOOCs can be better designed and implemented to meet the professional learning needs of teachers. Understanding these attitudes is essential for shaping policies, improving MOOC structures, and encouraging greater engagement among educators in digital learning environments. And how MOOCs are changing the way that education is delivered. This study seeks to advance knowledge of the effects of MOOCs on higher education and teachers' attitude toward this developing form of education through an analysis of existing research and data.

REVIEWS OF THE RESEARCH RELATED LITERATURE

A literature review is the synthesis of the available literature regarding your research topic. This synthesis merges the conclusions of many different sources to explain the overall understanding of the topic, thus laying a foundation for both the research question and primary research.

Jerin and Smitha (2024) conducted a descriptive survey revealing that a majority (63%) of higher education teachers showed a favourable attitude towards MOOCs, irrespective of gender or academic discipline. Similarly, Panja et al. (2022), through a mixed-method comparative study across two Indian higher educational institutions, found that both students and teachers held positive views on MOOCs, with students from CSS2 and teachers from CSS1 showing more optimism than their peers. Wu and Luo (2022) explored MOOCs in a blended learning setting, where both students and instructors expressed positive perceptions, noting enhanced interaction and flexibility, though instructors reported increased workload. Abderrahmane and Mebitil (2022) examined attitudes among EFL students and teachers, identifying generally positive views of MOOCs, but highlighting low readiness and the influence of ICT skills and awareness. Alamri (2022) used IDT and TAM models to show that perceived usefulness and ease of use significantly influenced students' academic self-efficacy, engagement, and learning persistence. Alhazzani (2020) found that MOOCs had a strong positive impact on higher education outcomes in Saudi Arabia, contributing to a 65% improvement. In Malaysia, Razami and Ibrahim (2020) confirmed through a TAM-based study that students' adoption of MOOCs was shaped by perceived usefulness, ease of use, and attitudes. Jalil et al. (2019) reported that Malaysian academics showed readiness to use and develop MOOCs, with a significant correlation between attitude and behavioural intention. Aljaraideh (2019), in a Jordanian context, identified both benefits and challenges of MOOCs among faculty, with notable gender-based perceptual differences. Lastly, Wang and

Zhu (2019) demonstrated that students in MOOC-based flipped classrooms performed better than those in traditional settings, although there was no significant shift in their self-efficacy or self-regulated learning.

The researcher had found that most existing research on MOOCs focuses on students' perceptions, adoption rates, and learning outcomes, while the attitudes of teachers, who play a critical role in MOOCs' implementation and success remain underexplored and few studies investigate how teachers perceive the integration of MOOCs into traditional teaching, their readiness to use MOOCs, and the challenges they face. Limited research exists on the barriers teachers face in adopting MOOCs, such as resistance to change, lack of incentives, or concerns about replacing traditional teaching methods. Research often focuses on developed countries or specific regions, leaving gaps in understanding how teachers in diverse cultural and educational settings (e.g., developing countries) perceive MOOCs. Overall, the significant gap in previous research lies in the lack of studies that specifically investigate '**Teachers' Attitude towards Massive Open Online Courses (MOOCs)'**, taking into account their unique context, challenges, and potential intervention strategies.

Research Questions

1. What is the attitude of teachers towards Massive Open Online Courses (MOOCs)?
2. What are the factors influencing the attitude of teachers towards Massive Open Online Courses (MOOCs)?

Objectives of the Study

The objectives of the proposed study are as follows:

1. To find out the attitude of teachers towards Massive Open Online Courses (MOOCs).
2. To identify the factors influencing the attitude of teachers towards Massive Open Online Courses (MOOCs).
3. To find out the significant differences between male and female teachers' attitude towards Massive Open Online Courses (MOOCs).
4. To find out the significant differences in the attitude of teachers towards Massive Open Online Courses (MOOCs) with respect to their teaching experience.

Hypotheses of the Study

$H0_1$- There is no significant difference between male and female teachers' attitude towards Massive Open Online Courses (MOOCs). (Objective 3)

$H0_2$- There is no significant difference in the attitude of teachers towards Massive Open Online Courses (MOOCs) with respect to their teaching experience. (Objective 4)

Methodology of the Study

The current study is quantitative, and the survey method of data collection is employed in light of the study's nature and demand. The data collected was analysed using statistics. Samples for this study were drawn from several professors at Visva-Bharati, Vinaya Bhavana, and Midnapore College (Autonomous). Samples were selected with the help of the Purposive Sampling technique. According to the objectives of the study, the researcher adopted and slightly modified a tool developed by Uppal, Ritu, Guide- Kamat, Vasudha (http://hdl.handle.net/10603/259957)**.** The tool is based on a Likert five-point scale, with options ranging from " strongly agree, to " strongly disagree on the basis of different attitudes. In the present study, the researcher

used a test for statistical analysis. It was originally developed by W.S. Gosset, who wrote under the pet's name 'Student'. The t-test is a statistical test that determines whether there is a significant difference between two groups' means (averages). It assists researchers in determining whether the variations detected in data are due to actual impacts or random chance. Using an independent samples t-test to compare the average scores. If the p-value is less than 0.05, you can conclude that there is a significant difference in attitudes between male and female teachers. The mode of response to each of the items of the research tool is in the form of an agreeable scale. It is known as a 5-point Likert scale, which ranges from strongly disagree. The responses were taken by strongly agree, agree, neutral, disagree, and strongly disagree. For scoring of the responses 5 to 1 mark is to be provided for the responses.

ANALYSIS AND INTERPRETATION

Following data collecting, the following stage of the research process involves organising, analysing, and interpreting the data as well as formulating, drawing conclusions, and extrapolating conclusions to create a meaningful picture from the unprocessed data. The analysis and interpretation of data involve the objective material in the process of the researcher and their subjective reaction, and what they want to obtain from the data. The data was analysed according to pre-specified objectives.

Objective 1: To find out the attitude of teachers towards Massive Open Online Courses (MOOCs).

Table No. 1: Attitude of teachers towards Massive Open Online Courses (Positive Items)

Positive Items	**Responses (38)**						
Item No.	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Total Score	Mean Score
1	70	84	9	0	0	163	4.29
2	85	64	15	0	0	164	4.32
4	90	64	12	0	0	166	4.37
5	65	72	12	6	0	155	4.08
6	65	68	21	2	0	156	4.11
8	70	63	9	0	0	142	3.74
9	30	76	33	4	0	143	3.76
11	65	76	18	0	0	159	4.18
13	50	80	24	0	0	154	4.05
15	75	80	9	0	0	164	4.32
16	45	68	27	6	0	146	3.84
17	50	88	12	4	0	154	4.05
18	75	72	9	4	0	160	4.21
19	75	64	15	4	0	158	4.16

Table No. 2: Attitude of teachers towards Massive Open Online Courses (Negative Items)

Negative Items	**Responses (38)**						
Item No.	Strongly Agree (1)	Agree	Neutral	Disagree	Strongly Disagree	Total Score	Mean Score
3	9	22	45	8	5	92	2.42
7	5	8	6	68	50	137	3.61
10	4	32	39	20	0	95	2.50
12	1	14	18	72	30	135	3.55
14	0	10	18	72	45	145	3.82
20	0	8	9	72	65	154	4.05

Table No-3 : Attitude Scale

Attitude Category	**Mean Range**
5.00 – 4.21	Highly Positive Attitude
4.20 – 3.41	Positive Attitude
3.40 – 2.61	Neutral Attitude
2.60 – 1.81	Negative Attitude
1.80 – 1.00	Highly Negative Attitude

The analysis of teachers' responses toward MOOCs reveals an overall positive disposition. The average score for positive items stands at 4.10, which falls within the range indicating a clearly favourable attitude. This suggests that most teachers acknowledge the benefits and relevance of MOOCs in contemporary education, showing agreement or strong agreement with statements endorsing their usefulness and effectiveness.

On the other hand, the responses to negative items, after appropriate reverse coding, yield a mean of 3.33. This reflects a more neutral to slightly positive orientation, indicating that while teachers generally reject the negative assumptions or criticisms about MOOCs, some degree of hesitation or uncertainty still exists.

When both sets of items are considered together, the overall mean score of 3.72 confirms a positive attitude among teachers. While the positive items were rated more affirmatively, the mixed reactions to negative items suggest a nuanced perspective—teachers recognize the potential of MOOCs, but they may also be cautious about fully endorsing them without further experience or support. Therefore, the data indicate that while enthusiasm exists, it is tempered with a degree of critical reflection and the need for more contextual adaptation and institutional backing.

Interpretation

The data suggests that teachers hold a generally positive attitude toward MOOCs, appreciating their benefits and educational relevance. While they largely agree with supportive statements, their responses to critical views reveal some underlying reservations. This indicates that teachers are optimistic but cautiously

so, highlighting the need for greater institutional support, training, and contextual integration of MOOCs into traditional teaching practices.

Objective 2: To identify the factors influencing the attitude of teachers towards Massive Open Online Courses (MOOCs).

VARIOUS FACTORS OF STATEMENTS IN THE MOOC RATING SCALE

Sr. No.	Factors	Statement No.	Number of Statements
I	Content	3,4,5	3
II	Course Delivery	1,2,11,12,17,19,20	7
III	Assessments and Activities	9,10,16,18	4
IV	Media	6.7,8,13,14	5
V	Facilitator	15	1

Factor-wise Analysis

I. Content

The content of MOOCs is an important factor influencing teachers' perspectives. This covers the quality, relevance, clarity, timeliness, and cultural context of the material provided in the courses. To measure teachers' perceptions, they responded to Likert-scale comments about MOOC content. Statements numbers 3,4,5 are related to the Content of MOOCs.

In statement number 3, the results showed that the majority of the teachers (39.5%) were neutral, believing that the objectives of the MOOCs course might have been more clearly stated. The majority of the remaining teachers strongly agreed (23.7%) or agreed (28.9%), while only a few instructors strongly disagreed (2.6%) or disagreed (5.3%) with the aforesaid statement.

In statement number 4, the result showed that the majority of the 38 teachers (47%, 42%) believe that the examples/cases offered in the content of MOOCs helped their learning, while a small number of teachers were neutral.

In statement number 5, the results showed that the majority of the 38 teachers believed they felt motivated to explore content-related questions on MOOCs, while a few other teachers were neutral and disagreed with the above statement**.**

So, the researcher can infer that **'Content'** is one of the most favourable factors surrounding MOOCs, and the results show that the majority of teachers replied positively to content-related statements, with only a few teachers neutrally supporting those statements.

II. Course Delivery

Course Delivery refers to the manner, methods, and efficacy with which MOOC information is given to students. This encompasses video/audio quality, explanation clarity, teaching approaches, visual use, timing, pace, and engagement techniques in MOOCs. Teachers' attitudes towards course delivery can influence their readiness to incorporate MOOCs into their teaching and professional development.

In statement number 1, the results showed that the majority of teachers believed that the course delivery of MOOCs was properly planned and implemented, with only a few teachers remaining neutral.

In statement number 2, the results showed that most of the teachers' attitude were that they were able to locate all the study material easily, and a few teachers' attitude were neutral towards the item.

In statement number 11, the results showed that 38 maximum number of teachers strongly agreed and agreed that the course delivery of MOOCs helped keep them on task in a way that helped them to learn. While relatively few teachers were neutral with the statement.

In statement number 12, the findings revealed that the majority of the 38 teachers strongly disagreed or disagreed that they suffered technical disruptions (link not working, login problem, etc.). While 15.8% of instructors were neutral, 2.6% strongly agreed, and 18.4% agreed with the statement.

In statement number 17, the results showed that the majority of the 38 teachers (26.3%, 57.9%) strongly agreed or agreed that the Content provided through MOOC was accurate**.** While 10.5% of teachers were neutral, 5.3% of teachers disagreed with the statement.

In statement number 19, the findings revealed that the majority of the 38 instructors (15) strongly agreed, and 16 agreed. That MOOC made them feel like they were a part of a wider community. While just five teachers were neutral, two disagreed with the statement.

In statement number 20, the findings revealed that the majority of the 38 teachers (31 in total) strongly objected or disputed that they would not prefer to study through MOOCs, with only three remaining neutral and four agreeing.

So, the researcher can conclude that **'Course Delivery'** is one of the most favourable factors surrounding MOOCs, and the findings show that the majority of teachers responded positively to course delivery-related statements, with only a few teachers neutrally supporting those statements and some disagreeing with them.

III. Assessments and Activities

In MOOCs, assessments and activities are critical for reinforcing learning and evaluating participants' comprehension. Quizzes, assignments, peer-reviewed projects, discussion forums, and self-assessment tools are some examples. Teachers' perceptions of the quality, regularity, relevance, and fairness of these exams influence their attitudes towards MOOCs.

In statement number 9, the findings showed that the vast majority of the 38 teachers (25 in total) highly agreed or agreed that the activities of the MOOC platforms sparked their interest. 11 teachers were indifferent on the aforementioned item, with only two disagreeing.

In statement number 10, the results showed that the majority of the 38 teachers (42.1%, 34.2%) agreed or were neutral about the tasks/ activities given through MOOCs could have been more interesting to help them understand better. Whereas 10.5% and 13.2% strongly agreed or disagreed with it.

In statement number 16, the result showed that the majority of the 38 teachers (26 in total) strongly agreed or agreed that the duration of the MOOC was appropriate, with only 9 teachers remaining neutral and 3 teachers disagreeing.

In statement number 18, the findings revealed that the majority of the 38 teachers (47.4%, 39.5%) agreed or highly agreed that MOOC helped them enhance the requisite abilities. In comparison, 5.3% and 7.9% disagreed or were neutral on the issue.

As a result, the researcher can conclude that **'Assessments and Activities'** is one of the most favourable factors surrounding MOOCs, and the findings show that the majority of teachers responded positively to Assessments and Activities-related statements, with only a few teachers neutrally supporting those statements and others disagreeing.

IV. Media

The media utilised in MOOCs is important for information delivery, student engagement, and overall user experience. It contains video lectures, animations, infographics, audio, downloadable PDFs, and other multimedia resources. Teachers' perceptions towards MOOCs are influenced by how successfully and creatively media is used to facilitate learning.

In statement number 6, the study found that the majority of the 38 teachers (34.2%, 44.7%) strongly agreed or agreed that all videos available on MOOC sites are appropriate, clear, and audible. 18.4% of teachers remained neutral, while 2.6% disagreed with the statement.

In statement number 7, the findings revealed that the majority of the 38 teachers strongly disagreed or disagreed (27) that the media (pictures, videos, etc.) used in MOOCs did not improve their learning. While a few teachers were impartial, others strongly agreed or agreed with the statement.

In statement number 8, The findings revealed that the majority of the 38 teachers (36.8%, 55.3%) were strongly agreed or agreed that Images used in learning materials of MOOCs were relevant to the topic and 7.9% of teachers were neutral towards the above statement and no teachers strongly disagreed or disagreed with the statement.

In statement number 13, the study discovered that the majority of the 38 teachers (30 in total) highly agreed or agreed that the downloaded User Manual offered is beneficial for comprehensive reference long after the MOOC has concluded, with only 8 teachers remaining neutral.

In statement number 14, the findings revealed that the majority of the 38 teachers (47.4%, 23.7%) disagreed or strongly disagreed that Sharing of experiences in the group discussions did not add to their knowledge. In contrast, 13.2% and 15.8% agreed or were neutral about it.

As a result, the researcher can conclude that **'Media'** is one of the most favourable factors surrounding MOOCs, and the findings show that the majority of teachers responded positively to media-related total 5 statements, with only a few teachers neutrally supporting those statements and others disagreeing.

V. Facilitator

In MOOCs, the facilitator (course teacher or mentor) is critical for leading the learning process, answering doubts, maintaining interaction, and inspiring students. In traditional classes, facilitators are easily accessible. However, with MOOCs, their presence is frequently virtual or asynchronous, which may alter how teachers evaluate their efficacy.

In statement number 15, the majority of the 38 teachers' maximum number of teachers (15) strongly agreed and agreed (20) that the Introduction and summarization of the topic by the facilitator helped them understand the topic better. While relatively few teachers (3) were neutral with the statement.

Interpretation

As a result, the researcher can conclude that **'Facilitator'** is one of the most favourable characteristics surrounding MOOCs, and the findings showed that statement number 15 received positive responses from the majority of teachers, with only a few teachers neutrally supporting it.

Objective 3: There is no significant difference between male and female teachers' attitude towards Massive Open Online Courses (MOOCs).

$H0_1$- There is no significant difference between male and female teachers' attitudes towards Massive Open Online Courses (MOOCs). (Objective 3)

Table No. 3: t-distribution of Male and Female teachers

Category	N	Mean	SD	Pooled SD	SEd	t-Value	Df	Critical t-value	Level of Significance (0.05)
Male	23	78.1739	5.26	6.26	2.0658	-0.27	36	2.03	Not Significant
Female	15	78.7333	7.58						

Interpretation

It was found from the above table, no 4.1, that the calculated value of 't' is -0.27 with a Degree of Freedom of 36. But the critical value of 't' at the 0.05 level is 2.03. So that the calculated value of 't' is less than the table value at the 0.05 level of significance. Therefore, the t-test is not significant, and the null hypothesis is accepted. Hence, it has been concluded that there is no significant difference between male and female teachers' attitudes towards Massive Open Online Courses (MOOCs).

Objective 4: To find out the significant differences in the attitude of teachers towards Massive Open Online Courses (MOOCs) with respect to their teaching experience.

$H0_2$- There is no significant difference in the attitude of teachers towards Massive Open Online Courses (MOOCs) with respect to their teaching experience. (Objective 4)

Table No. 4: t-distribution of teachers with below ten years and above ten years of teaching experience.

Category	N	Mean	SD	Pooled SD	SEd	t-Value	Df	Critical t-value	Level of Significance (0.05)
Below ten years	16	78	5.77	6.1453	2.01787	-0.43	37	2.03	Not Significant
Above ten years	22	78.86	6.40						

Interpretation

It was found from the above table, no 4.2, that the calculated value of 't' is -0.43 with a Degree of Freedom of 37. But the critical value of 't' at the 0.05 level is 2.03. So that the calculated value of 't' is less than the table value at the 0.05 level of significance. Therefore, the 't' test is not significant, and the null hypothesis is accepted. Hence, it has been concluded that there is no significant difference in the attitude of teachers towards Massive Open Online Courses (MOOCs) based on their teaching experience.

CONCLUSION

According to objective number one, the majority of teachers have a positive attitude towards MOOCs. The current generation of teachers is very knowledgeable and adept at using various MOOC features, and they are very comfortable with them. Purpose number two indicated that, following the study's purpose, the researcher had classified 20 statements into 5 factors and conducted a precise factor-wise analysis of the data. The findings revealed that each element of the study was adequately represented by the items, and teachers responded positively. Objective number three denoted that there is no significant difference between male and female teachers' attitude towards Massive Open Online Courses (MOOCs).

So, the formulated null hypothesis was accepted. Then, Objective number four denoted that there is no significant difference in the attitude of teachers towards MOOCs with respect to their teaching experience. So, the formulated null hypothesis was accepted. The responses suggested a positive assessment of delivery strategies, such as instructor clarity, multimedia utilisation, and tempo. There was some discontent with the interactive nature of course delivery. Teachers agreed. MOOCs provided flexibility in terms of time and location, which was a significant benefit for in-service workers. Some had technological or connectivity issues.

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