

An Analysis of Learners' Motivation in Massive Open Online Courses (Moocs): A Strategic tool in Education Industry 5.0

Dr. Anjali Kalse,

Director, Bharati Vidyapeeth's Institute of Management Studies and Research, Navi Mumbai,
dranjali@bvimsr.com

Dr. Priyeta Priyadarshini,

Assistant Professor, Bharati Vidyapeeth's Institute of Management Studies and Research, Navi
Mumbai, priyeta.priyadarshini@bvimsr.com

Dr. Mona Sinha,

HOD, Bharati Vidyapeeth (Deemed to be University) Department of Management Studies, Navi
Mumbai, mona.sinha1@bharativedyapeeth.edu

ABSTRACT

Background: The Indian education system has started improving in various parameters, since the introduction of the National Education Policy (NEP) 2020. An increase in quantity and quality of Massive Open Online Courses (MOOCs) is one such initiative. Any efforts to improve the efficiency of such courses can be assessed unless and until we understand the learners' motivation behind joining such courses. The present research has been a part of the Indian Council of Social Science and Research (ICSSR) funded major project.

Objective: The study was undertaken to analyse the parameters affecting learners' motivation while joining and completing MOOCs.

Method: The secondary and primary data were collected from respondents all across the country as well as websites, journal articles. A detailed literature review has been undertaken for the same.

Result and Conclusion: The study concludes that course design, structure, Instructor Feedback, etc. are a few of the parameters which impact the learners' motivation in Massive Open Online Courses (MOOCs).

Keywords: Massive Open Online Courses (MOOCs), Learners' Motivation, Course design, structure, Instructor Feedback

1. Introduction

Over the years, the Indian education system has been able to penetrate rural remote areas and has been able to up the literacy level of the masses. This success is however limited to the primary

level. Higher education has been mostly cost and availability-wise inaccessible to most of the population. There are also sections of populations who had to discontinue their education on account of multiple personal and social reasons. MOOC can be a wonderful opportunity for these sections to pick up the threads and be reengaged in mainstream education.

MOOCs were initiated in Canada by Stephen Downes and George Siemens, but gained popularity in the U.S. when Stanford University professor Sebastian Thrun held a free online course on artificial intelligence in 2011. Some years later, MOOCs expanded their audience to tens of thousands of users enrolling in courses in science and humanities. MOOCs began to grab the attention of the policymakers, which resulted in the number of contacts with the leading American universities. According to Helen Hu, Coursera, Udacity, and edX are the three primary ventures pointing the way to a new era of learning.

The structure of a typical MOOC is suitable for each user, though the course is targeted at a mass audience. A student has an opportunity to pause or rewind the video and watch it at his/her own pace. Students submit home tasks, which are automatically graded. But the most important is the feedback, which is provided both by the instructor and the peers. The major MOOC providers, Courses, Edx, and Udacity have offered a range of approaches with one central problem – massive students' numbers are impossible for a teacher to handle. To deal with the problem, MOOCs commonly offer a simple solution- get the students to teach and grade each other. Peer review motivates and supports students, giving them the chance to share knowledge and ideas with the ones they might have never had a chance to meet in person. More than that, the MOOCs in science create virtual laboratories to engage students in the learning process through Massive Open Online Course (MOOCs) represents a potentially exciting opportunity to use technology to realize many of the promised benefits of universal higher education.

2. Research Methodology

The research methodology adopted in this study is a descriptive and exploratory study. Both primary and secondary data have been collected to understand and analyze the associated factors with MOOCs. A detailed questionnaire was filled out by the learners regarding various aspects of MOOCs. The learners were selected from various MOOCs on different subjects. a detailed literature review had been undertaken for the study.

3. Research Objectives

- i. To understand the parameters impacting the Learners Motivation in Massive Open Online Courses(MOOCs)

- ii. To analyze the factors impacting the retention of students in MOOCs

4. Literature Review

1.	<p>Ho, A. D., Reich, J., Nesterko, S., Seaton, D. T., Mullaney, T., Waldo, J., & Chuang, I. (2014) HarvardX and MITx: The first year of open online courses Published as HarvardX and MITx Working Paper No. 1 URL: http://ssrn.com/abstract=2381263, Pages: 1-33</p>	
	<p>Research Method and Participation</p>	<p>Findings</p>
	<p>The report gives detailed data on the online courses launched by HarvardX and MITx over their first year. It includes descriptive statistics about the activities and the registrants.</p>	<p>Initial 17 online courses were launched by HarvardX and MITx on the edX platform. There were a total number of 841,687 registrations. Among which 43,196 registrants earned a course completion certificate, with 292,852 registrants never using the course materials. In addition, while 35, 937 registrants engaged with half of the course content, 469,702 registrants utilized less than half the percentage. 31% of them were males, 29% females, 33% had a higher school education or below, 6.3% were 50 years or older than that, and 2.7% had a mailing address from the Least Developed Countries. Moreover, course certification rates cannot be taken as a factor in determining the impact and potential of MOOCs as it is misleading many times. And the courses also witnessed a better range of diversity it offered in terms of the noticed demographics like gender, median age, college degree attainment, and the percentage from the U.S. Besides, enrolment takes place continuously and it will be very high as the date is close to the commencement of the program and it reduces once the launch date passes. Therefore, managing asynchronicity is a big challenge. One particular area of interest is those candidates who explore a substantial amount of course content but are least bothered to engage in assessments. In addition, inactive participation accounts for 50% in the first week, which later declines by 165 in the second and reduces gradually. With more than 4,000 registrants earning a certificate across both institutions, 1,912 registrants earned certificates from both. Another astonishing fact is that over 76 registrants gained 5 or more course completion certificates from the initially launched 17 courses.</p>

2.	Katy Jordan (2014, February) Initial Trends in Enrolment and Completion of Massive Open Online Courses, Published in Journal Name: The International Review of Research in Open and Distance Learning, Pages: 133-160, Volume: 15, Issue: 1	
	Research Method and Participation	Findings
	The paper provides data about the variations in enrolment and completion rates of MOOCs over time. Also, it analyses the factors that affect both elements. Data is collected from several publicly available online sources such as MOOC student bloggers, news stories, conference presentations, and university reports.	It was found that among the 43,000 students enrolled for the online course, only 6.5% of them complete the course. And the enrolment number is found to reduce overtime establishing a positive relationship with the course length. On the other hand, completion had a negative correlation with course length, despite being consistent across university rank, time, and total enrolment. Overall, the paper provides more insights into the evolution of MOOCs and the latest trends in the enrolment and completion of online courses. The key limitation of the study is issues regarding the validity of the data used as the figures would change over time. Moreover, some figures are rounded off whereas several others are accurate depending upon the institution released, however, the reliability of the data utilized is not much contentious.
3.	Carmen Holotescu, Gabriela Grosseck, Vladimir Crețu, and Antoanela Naaji (2014) Integrating MOOCs in Blended Courses Published in Conference: The 10th International Scientific Conference eLearning and software for Education Bucharest, April 24-25, 2014	
	Research Method and Participation	Findings
	The paper analyses a new approach where the learners' MOOC participation is integrated with their blended course which is run on a social mobile Learning Management System (LMS). And the study connects various courses on web programming with the undergraduate program for the same during Fall 2013. Besides, the main research questions are (i) the fundamental reasons to integrate university programs with MOOCs, (ii) the criteria upon which the course was	The major subjects under scrutiny were that of both technical and social parts of web 2.0 such as ajax, MySQL, HTML, HTML5, CSS, Perl, PHP, Javascript, and XML, Web2.0/Social Media, OERs and Creative Commons licenses, and MOOCs. Besides, Ciripu.edu is the online private group space posting learning materials enabling anytime access of OERs to the students. It is the basic platform for learning, discussing, questioning, and answering. Also, the students must create their learning environment (PLE) during the course period interacting with external participants in social media in gathering educational information. And the highly valued face-to-face session is utilized for writing exams, getting feedback, for even deeper understanding, and solving new exercises. Moreover, the main reasons for integrating

<p>designed and how student activities are monitored and incorporated in the course scenario, and (iii) analysis of survey results integrating the experience of MOOC learners, and a few more issues are also being addressed. Moreover, the latter part is further explored as (i) whether MOOCs facilitates expanded clarification of students' learning issues, (ii) students' suggestions for more active participation, (iii) comparative study of Web programming course and the MOOC contents, also finding ways to improve the effectiveness of the course in the virtual space, and (iv) the perceived importance of MOOC for the personal and professional development.</p>	<p>MOOCs with college programs were knowledge expansion, awareness of the latest trends in MOOCs, developing students in exhibiting concrete viewpoints, and also to evaluate the effectiveness of personal development through the integration of online courses in higher education. Several pedagogical benefits concerning blended learning include openness, peer assistance, collaboration with the local community, PLE development, self-paced learning, focused attention, skills development, and playing delegation roles. However, the main suggestion of the students was to get feedback directly from the instructors and not from the peer groups. Though MOOCs expose learners to quality content, it challenges instructors in developing new skills required to deliver efficiently. For this they have to adopt new pedagogical models so that the blended learning collaborated with local community teachers adopts the latest teaching approaches, thus xMOOCs resembling cMOOCs. Overall, the paper offers suggestions for instructors about the feasibility and effectiveness of integrating MOOCs in academics. The future works in this regard are to analyze the pedagogical benefits for individual blended learning programs, ways to assess the distributed activities of students, and to study the ways through which MOOCs have been curated.</p>				
<p>4.. Daphne Koller, Andrew Ng, and Zhenghao Chen (2013, June 3) Retention and Intention in Massive Open Online Courses: In-Depth Published in Website: EDUCAUSE review URL: https://er.educause.edu/articles/2013/6/retention-and-intention-in-massive-open-online-courses-in-depth</p>	<table border="1"> <thead> <tr> <th data-bbox="675 1509 667 1597">Research Method and Participation</th> <th data-bbox="675 1509 1398 1597">Findings</th> </tr> </thead> <tbody> <tr> <td data-bbox="675 1597 667 2058"> <p>The article explores the retention of MOOCs from the intention of the learners in the particular context of varied motivational levels and backgrounds.</p> </td> <td data-bbox="675 1597 1398 2058"> <p>In 2012, Coursera witnessed only 5% course completion of the participants among a total of 40,000 enrolled for a course. A majority of the students entering MOOCs come with the expectation of earning an extra credential that would be more beneficial to their personal as well as professional development. Besides, sincere learners can be categorized into three groups viz., active participants, community contributors, and passive participants. And interpreting retention metrics by taking account of learners' intentional goals would be productive. In Coursera,</p> </td> </tr> </tbody> </table>	Research Method and Participation	Findings	<p>The article explores the retention of MOOCs from the intention of the learners in the particular context of varied motivational levels and backgrounds.</p>	<p>In 2012, Coursera witnessed only 5% course completion of the participants among a total of 40,000 enrolled for a course. A majority of the students entering MOOCs come with the expectation of earning an extra credential that would be more beneficial to their personal as well as professional development. Besides, sincere learners can be categorized into three groups viz., active participants, community contributors, and passive participants. And interpreting retention metrics by taking account of learners' intentional goals would be productive. In Coursera,</p>
Research Method and Participation	Findings				
<p>The article explores the retention of MOOCs from the intention of the learners in the particular context of varied motivational levels and backgrounds.</p>	<p>In 2012, Coursera witnessed only 5% course completion of the participants among a total of 40,000 enrolled for a course. A majority of the students entering MOOCs come with the expectation of earning an extra credential that would be more beneficial to their personal as well as professional development. Besides, sincere learners can be categorized into three groups viz., active participants, community contributors, and passive participants. And interpreting retention metrics by taking account of learners' intentional goals would be productive. In Coursera,</p>				

		learners watch videos an average of 1.7 times. Moreover, one in ten students watches it 2.7 times. However, the retention rates vary with a wide range of courses. Overall, it is a true challenge to locate the exact intentions of the learners and aid them to achieve the same.
5..	Samar Zutshi, Sheena O'Hare, and Angelos Rodafinos (2013) Experiences in MOOCs: The Perspective of Students Published in Journal: The American Journal of Distance Education Pages: 218-227, Volume: 27, DOI: 10.1080/08923647.2013.838067	
	Research Method and Participation	Findings
	The article examines the experiences of MOOC participants. Twenty-one blog posts of the students who have taken MOOCs earlier were analyzed. And the content analysis was used to classify the themes.	Mixed feelings were noticed from the blog comments. And the majority of the students did xMOOCs. Participants who had positive experiences were those who could manage their workload very well. And conventional assessment methods were no more feasible. Also, there is a greater need for clarified communication particularly in detailing the assessment instructions. Moreover, more sophisticated technological tools must be employed as unclear basic lecture videos were perceived as unsatisfactory. Besides, small sample size is the key limitation of this study, and research in the future can be extended to cMOOCs as well.

5. Data Analysis

The data collected from the survey questionnaire was analyzed to understand the factors associated with the learner Motivation of MOOCs.

Table 1 Scales for Measurement of the factors

Serial No.	Constructs	Items	Measures
1	Learner Motivation (LM)	LM1	Level of effort you put into the course 11
		LM2	What are your reasons behind joining this course? 8
		LM3	If Not continuing the course, what are the reasons? 7

Frequency Tables

Table 2 Retention

	No. of	Percent
--	--------	---------

		Respondents	
Valid	Not Retained / Left the course	44	14.6
	Retained	257	85.4
	Total	301	100.0

Logistic Regression-Retention

Table 3 Case Processing Summary

Unweighted Cases		N	Percent
Selected Cases	Included in Analysis	180	59.8
	Missing Cases	121	40.2
	Total	301	100.0
Total		301	100.0

- If weight is in effect, see the classification table for the total number of cases.
- The category variable Perceived Improvement is constant for the selected cases. Since a constant term was specified, the variable will be removed from the analysis.

Table 4 Dependent Variable Encoding

Original Value	Internal Value
Not Retained / Left the course	0
Retained / Completed the course	1

Table 5 Categorical Variables Codings for Logistic Regression

PERCEPTION		No. of Respondents	Parameter coding
			(1)
Perceived Difficulty Level	Low / Moderate	142	1.000
	High	38	.000
Course Structure	Poor / Average	64	1.000
	Good	116	.000
Instructor Feedback	Poor / Average	93	1.000
	Good	87	.000
Instructor-Learner Interaction	Poor / Average	54	1.000
	Good	126	.000
Perceived Effectiveness	Poor / Average	62	1.000
	Good	118	.000
Course Design	Poor / Average	80	1.000
	Good	100	.000

Table 6 Variables in the Equation

Perception about	B	S.E.	Wald	df	Sig.	Exp(B) Odds Ratio	95% C.I. for EXP(B)	
							Lower	Upper
CD (1)	-.490	.532	.848	1	.357	.613	.216	1.738
CS (1)	.071	.566	.016	1	.901	1.073	.354	3.253
IF (1)	-.896	.462	3.765	1	.052	.408	.165	1.009
ITI (1)	.156	.516	.091	1	.762	1.169	.425	3.215
PerEf (1)	-.838	.496	2.849	1	.091	.433	.164	1.144
PD (1)	-.058	.555	.011	1	.917	.943	.318	2.802
Constant	2.590	.532	23.741	1	.000	13.335		

Students with a good perception of Course Design (CD) have 0.613 times (little more than half) retention in the course as compared to those who have a Poor perception of Course Design. This reflects those students who gave more significance to Course Design when provided with good course design tend to continue with the course.

Students with a Good perception of Course Structure (CS) have 1.073 times (almost the same) retention in the course as compared to those who have a Poor perception of Course Structure.

Students with a Good perception of Instructor Feedback (IF) have 0.408 times (a little less than half) retention in the course as compared to those who have a Poor perception of Instructor Feedback.

Students with Good Perception about Instructor Learner Interaction (ITI) have 1.169 times retention in the course as compared to those who have Poor perception about Instructor Learner Interaction.

Students with Good Perception about Perceived Effectiveness (PE) have 0.433 times (little less than half) retention in the course as compared to those who have Poor perception about Perceived Effectiveness.

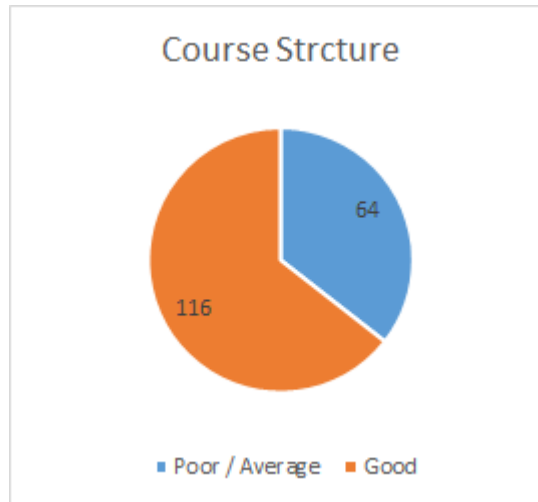
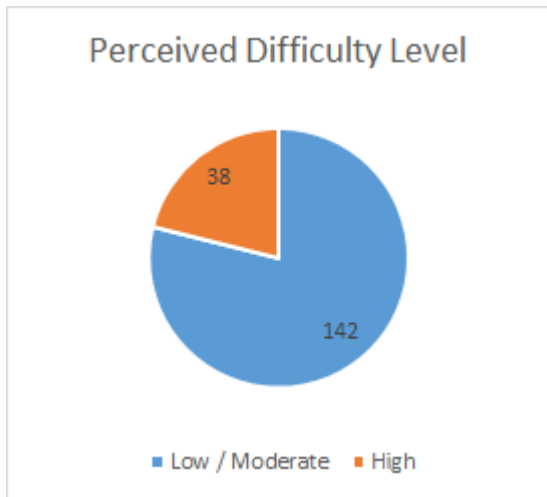
Students with Good Perception about Perceived Difficulty Level (PD) have 0.943 times (almost the same) retention in the course as compared to those who have Poor perception about Perceived Difficulty Level.

Logistic Regression – Perceived Effectiveness

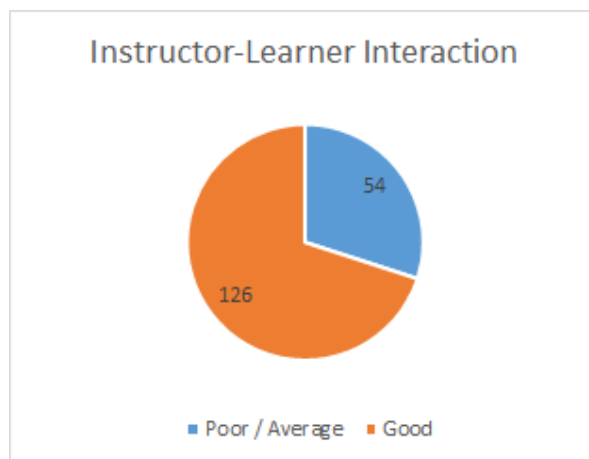
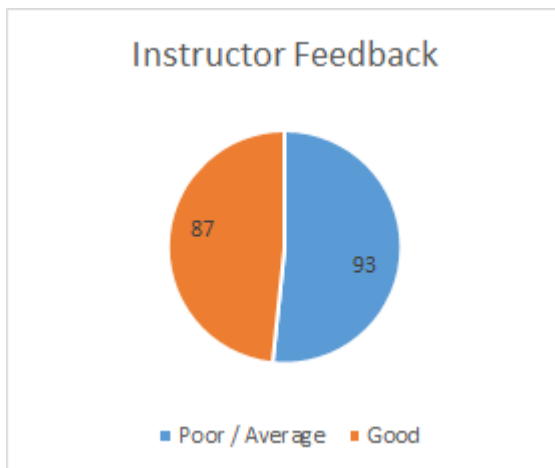
Table 7 Categorical Variables Codings

		No. of Respondents	Parameter coding
			(1)
Perceived Difficulty Level	Low / Moderate	142	1.000
	High	38	.000
Course Structure	Poor / Average	64	1.000
	Good	116	.000
Instructor Feedback	Poor / Average	93	1.000

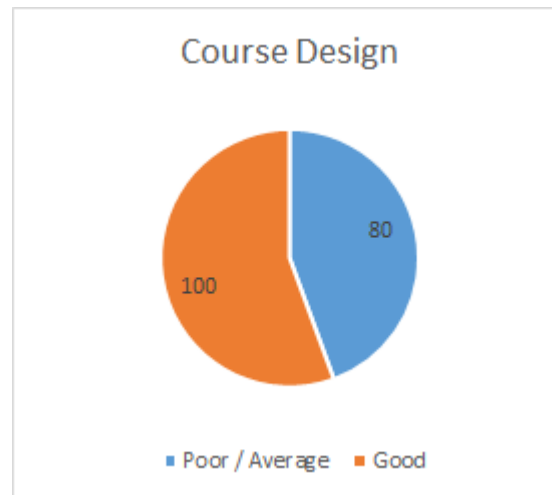
	Good	87	.000
Instructor-Learner Interaction	Poor / Average	54	1.000
	Good	126	.000
Course Design	Poor / Average	80	1.000
	Good	100	.000
	Low / Moderate	142	1.000



From the above data, 142 participants viewed the Perceived Difficulty Level to be low or moderate and 38 participants viewed the Perceived Difficulty Level as high. Also, 116 respondents find the course structure as good whereas 64 others find the course structure as average or poor.



93 learners felt the Instructor Feedback was good, whereas 87 numbers consider the Instructor Feedback as poor/ average. Besides, 126 respondents perceive the Instructor-Learner Interaction as average or poor and only 54 respondents perceive the Instructor-Learner Interaction as good.



Moreover, 100 members felt the Course Design as good and 80 numbers felt the Course Design as poor or average.

Table 8 Variables in the Equation

		B	S.E.	Wald	df	Sig. (P)	Exp(B) Odds Ratio	95% C.I. for EXP(B) Odds Ratio	
								Lower	Upper
Step 1 ^a	CDcat2(1)	-1.289	.467	7.634	1	.006	.276	.110	.688
	CScat2(1)	-.833	.495	2.833	1	.092	.435	.165	1.147
	IFcat2(1)	.214	.428	.251	1	.616	1.239	.535	2.867
	ITIcat2(1)	-1.706	.443	14.807	1	.000	.182	.076	.433
	PDcat2(1)	-.833	.540	2.375	1	.123	.435	.151	1.254
	Constant	2.764	.536	26.535	1	.000	15.857		

a. Variable(s) entered on step 1: CDcat2, CScat2, IFcat2, ITIcat2, PDcat2.

Students with a Good perception of Course Design (CD) have 0.276 times perceived effectiveness in the course as compared to those who have Poor perception about Course Design (CD).

Students with a Good perception of Course Structure (CS) have 0.435 times perceived effectiveness in the course as compared to those who have a Poor perception of Course Structure (CS).

Students with a Good perception of Instructor Feedback (IF) have 1.239 times perceived effectiveness in the course as compared to those who have a Poor perception of Instructor Feedback (IF).

Students with a Good perception of Instructor-Learner Interaction (ITI) have 0.182 times perceived effectiveness in the course as compared to those who have Poor perception about Instructor-Learner Interaction (ITI).

Students with Good perception about Perceived Difficulty Level (PD) have 0.435 times perceived effectiveness in the course as compared to those who have Poor perception about Perceived Difficulty Level (PD).

6. Conclusion/ Discussion

The COVID-19 pandemic has been a trigger and accelerator for online education all over the world. The virus has made humans realize the significance of contactless delivery of education. Benefits are many, and as the post-pandemic challenges unfold, we are unraveling new ones every day. The much-discussed modality in education is Massive Open Online Courses (MOOCs). Perhaps, MOOC is born out of two external forces that pressurized higher educational institutions to innovate: (i) to make education less costly with the growing demand in the higher education sector, and (ii) to prove the credibility of their courses qualified for employment as an up-gradation to the degree holders. Though it is instrumental in transforming societies towards adopting sustainable educational practices, its sustainability is intertwined with the complexity in developing and implementing curriculum, particularly dealing with interdisciplinary approaches. Besides, MOOCs possess several challenges in design and management, with a low completion rate topping the list. Other issues include pedagogical approach, business model, quality, quality certification, and validation and plagiarism. Thus, designing MOOCs to overcome these obstacles is a daring phenomenon as it has been a target of criticism and always compared with the traditional teaching models. Hence, the area is worthy of detailed investigation, thus initiating the research of "Issues in Designing and Sustainability of MOOC: Learning Analytical Model". The study adds more value by examining the concept from two perspectives, viz., industry professionals and learners.

The encompassing nature of MOOCs, which does not differentiate between location, class, income, and creed of learners, has been a blessing for eager and restless learners all across the globe. When faced with unique challenges, human civilization has found new solutions, especially in the last two years.

The detailed literature review suggests that there has been lots of research in this field, and the significance of MOOC has been established. However, there are concerns about its place in the field of formal education. The MOOCs all over the globe are facing the challenge of retaining and engaging the students. There are multiple reasons which have come to the fore with this research. The prime reason is the lack of accreditation. The learners who have joined the course in search of a degree and validation of their knowledge are unable to find the same in most of the MOOCs.

After a detailed analysis, literature review, and interaction with experts, the researchers have concluded that MOOCs present a very promising opportunity for a country like India. India needs a solution that applies to its huge population and addresses its massive requirements for educating its

learners. As the cost of higher education rises exponentially, there is an immediate need to address the issue. Accessibility is also one more concern that marks the education sector of India. With the geographical distances, income, and other divides plaguing the country, such free-of-cost solutions accessible to all become more imperative.

7. Suggestions

1. **Accreditation:** For any MOOC to be feasible in the long run, its accreditation is very important. The UGC and MHRD have taken very clear strategic policy steps in this direction, but implementation is weak. Students and universities are not very clear on the approval of the online courses for degree purposes. The industry is also clueless about the credibility of MOOCs. There is no clear-cut grading system for MOOCs. The information about accreditation has not been able to reach its desired audience.
2. **Credit-system:** The credit allocation for MOOCs is one more area where more clarity and transparency need to be infused. The students and the higher educational institutions lack understanding regarding the guidelines related to the credit system. More clarity is required regarding the credit system of online courses. Having a proctored exam at the end of the course is a limiting condition for most of the courses in India. For, e.g., A student cannot get a certificate for an NPTEL course unless and until he/she appears for an offline exam. The weaving of MOOCs along with regular offline courses need to be speeded up and have to be streamlined.
3. **Implementation:** Most MOOCs lose sustainability at the implementation level. The learners feel disengaged. The team managing the course has to be very agile and prompt in handling the queries and needs of the learners. The chats and discussion forums have to be fully functional and require continuous moderation, and assignments need to be evaluated and returned with personal comments. Communication channels and contact people need to be fully functional at this time.

8. References

1. Udacity Team. (2012). Udacity's Career Team is here to help you. Retrieved January 7, 2021, from <https://blog.udacity.com/2012/06/udacity-career-placement-program-is.html>
2. Wilkins, S., & Juusola, K. (2018). The benefits & drawbacks of transnational higher education. *Australian Universities' Review*, 60(2), 68-76.

3. Xu, D., & Jaggars, S. S. (2013). *Adaptability to Online Learning: Differences Across Types of Students and Academic Subject Areas*. New York: Community College Research Center: Columbia University.
4. Yuan, L., & Powell, S. (2013). *MOOCs and Open Education: Implications for Higher Education*. JISC CETIS. 10.13140/2.1.5072.8320.
5. Zawacki-Richter, O., Bozkurt, A., Alturki, U., & Aldraiweesh, A. (2018). What Research Says About MOOCs - An Explorative Content Analysis. *International Review Research in Open and Distributed Learning*, 19(1), 242-259.
6. Zutshi, S., O'Hare, S., & Rodafinos, A. (2013). Experiences in MOOCs: The Perspective of Students. *The American Journal of Distance Education*, 27, 218-227.