Asian Journal of Agricultural Extension, Economics & Sociology

39(11): 42-47, 2021; Article no.AJAEES.75053
ISSN: 2320-7027

Challenges in Designing and Development of Massive Open Online Courses (MOOCS) as Perceived by Instructors across India

Rohini Anand[1*]

[1]Department of Extension Education, Bihar Agricultural College, Bihar Agricultural University, Sabour, Bhagalpur (Bihar), India.

Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

Article Information

DOI: 10.9734/AJAEES/2021/v39i1130724
Editor(s):
(1) Dr. Sailendra Narayan Goswami, Government of Assam, India.
Reviewers:
(1) Toyin Owoade, Federal University, Nigeria.
(2) Griffith Petrus Hadebe, South Africa.
Complete Peer review History: https://www.sdiarticle4.com/review-history/75053

Original Research Article

Received 07 August 2021
Accepted 13 October 2021
Published 18 October 2021

ABSTRACT

The study aimed to explore the challenges perceived by the instructors during the designing and development of MOOCs in India. The data was collected through a mailed questionnaire with the help of Google form. A total of 79 respondents were involved across India. Descriptive research design was used for this particular study. The study revealed that content development (2.48) was perceived as a big challenge by the instructors because most of the content was available in video form. Learners' engagement (2.33) was found as the second most important challenge perceived by the instructors. Other important challenges were time pressure during the development of MOOCs (2.20); moderating discussion forum (2.11) and technical competency (2.06). It can be concluded that among all parameters content development is hectic and the most challenging. One can be more effective in content development when others parameters like technical competency, discussion forum etc. are tackled properly so that more time and energy can be given in content development.

Keywords: Instructor's motivation; agMOOCs; perceived challenges.

**Corresponding author: E-mail: rohini.anand12@gmail.com;*

1. INTRODUCTION

The worldwide lockdowns in 2020 due to COVID-19 pandemic resulted in global disruption of education systems in history including both social and economic repercussions affecting nearly 1.6 billion learners across 190 countries [1,2]. To counter this educational disruption, UNESCO recommended the utilization of digital learning and open educational applications and platforms to restart education for children and students [2]. The New Educational Policy -2020 (NEP-2020) of India places special emphasis on learning through distance mode. The policy proposes to encourage online learning to bridge the digital gap by providing suitable digital platform such as Study Webs of Active Learning for Young Aspiring Minds (SWAYAM), Digital Infrastructure for Knowledge and Sharing (DIKSHA), etc. The NEP-2020 aims to establish more virtual labs and equip school digitally. It also proposes to set up National Education Technology Forum, a platform for exchange of ideas on the use of technology to exchange learning [3].

"MOOCs" is one of the thrust areas under 'Digital India- 'Initiative'. The Government of India embarked on a major initiative called 'Study Webs of Active Learning for Young Aspiring Minds' (SWAYAM), to provide an integrated platform and portal for online courses, covering all higher education, high school and skill sector courses. It offers over 2150 courses taught by approximately 1300 instructors from over 135 universities [4]. Another platform delivering MOOCs that specifically deals with "Agriculture sector" is agMOOC app developed by IIT Kanpur in collaboration with the Commonwealth, London. Till date it has offered 21 courses.

One of the most distinctive features of MOOCs is "MASSIVE' indicating unlimited number of participants [5]. Although MOOCs is now one of the greatest innovations done in distance education, still not all MOOC learners fully benefit from these opportunities. The learners enrolling in MOOCs are heterogeneous and everyone has his/her own needs and pace of learning. Sometimes learners were unable to understand the concept and content of the MOOCs that ultimately led to disengagement and course abandonment [6]. Ferguson and Sharple [7] showed that the problems of course abandonment was generally due to the lack of solid pedagogical frameworks in MOOC environments. Most courses followed a one-size fits-all instructional approach and failed to address the individual needs of learners. Khalil et al. [8] explored the problems of student's disengagement or high drop outs and found it was mainly due to lack of time, absence of support and feelings of isolation, lack of previous knowledge and learning skills, unchallenging course design and the failure to understand the course content.

Though, MOOCs are getting wider acceptance all over the world but many challenges related to technology, delivery and economy, besides pedagogy have been identified [9]. Lack of student's motivation and low completion rates have been identified as the primary MOOCs issues in the literature [10,11]. Besides these generic issues, the focus of discussion in the current study are on the specific issues and challenges with MOOCs development in India. Venkatraman and Kanwar [12] found that in developing countries like India, MOOCs accreditation was more pertinent because course participation in real-time or online was expected to lead to credit. They also emphasized on the need for comprehensive well developed system for MOOCs' operation and delivery to ensure quality. Kaveri et al. [13] revealed that in India, the population with better internet skills and existing preference for learning through videos were more likely to adopt MOOCs. In some of the earlier literatures, economic issues with MOOCs like high cost of running a MOOC or lack of a business model have been documented as the challenges [14,11]. To improve the quality and scale within the existing university system the concept of blended MOOCs was introduced by the Prof Phatak at IIT Bombay, India to ensure a superior educational experience that not a "pure" MOOC can do [15]. The main concept of blended MOOC is to combine the MOOC platform-supported activities and video based content. In light of this, the study encompassed the challenges perceived by the instructors in designing and development of MOOCs in India.

2. RESEARCH METHODOLOGY

This study was conducted online, through mailed questionnaire as Google form to the instructors who conducted MOOCs in India through the digital platform of SWAYAM and agMOOCs. A total of 79 respondents who completely filled the questionnaire and returned it formed the sample of the study. The questions were posed on a total of 12 challenges including content development; arranging financial resources; engaging learners;

time limitations of designing MOOCs; moderating discussion forum; technical competency; solving technical issue of learners; getting learners' feedback; institutional support; internet speed; managing MOOC platform and evaluation of learners progress. These parameters were identified based on previous studies Zhu et al. [16]. Reactions of the instructors were collected on a rating scale of 'Very challenging', 'Somewhat challenging' and 'Not at all challenging' which attracted scores of 3, 2 and 1 respectively. The responses were tabulated and classified using descriptive statistics like frequency counts and percentages. Furthermore, the data was presented on the basis of mean value in a figure for better comprehension. The mid-point of Very challenging, somewhat challenging and Not at all challenging will be 2 (3+2+1/3=2). So any mean value >=2 indicates highly challenging while any value < 2 indicates least challenging.

3. RESULTS

Table 1 depicted that the majority of the instructors (53.16%) perceived that content development in MOOC courses was very challenging followed by 41.77 per cent who responded it was somewhat challenging and 5.07 per cent responded it was not challenging at all. The instructors perceived that arranging fund for the development of MOOCs was not very challenging (59.50%), whereas 27.80 per cent found it not at all challenging and only 12.70 per cent responded it was very challenging. The instructors felt that learners' retention was a very challenging task (38.00%), whereas 57 per cent perceived it was somewhat challenging and remaining (5.07%) responded it was not at all challenging. Most of the instructors (64.60%) felt that the time limit in development of MOOCs was somewhat challenging. There were 70.89% of the instructors who felt that moderating discussion forum was somewhat challenging. On the other hand there were also 20.25% instructors who felt it was very challenging and the rest (8.86%) replied it was not at all challenging. Technical competency was not very challenging to most of the instructors (65.80%), while only 20.30% instructors felt it was very challenging. One of the major challenges in MOOCs development is getting the feedback of the learners while in this study, the majority of the instructors (46.81%) felt this was not at all

Table 1. Instructors' perceived challenges in the development of MOOCs n=79

Parameters	Very Challenging	Somewhat Challenging	Not at all challenging
Content Development	42 (53.16)	33 (41.77)	4 (5.07)
Arranging financial resources	10 (12.70)	47 (59.50)	22 (27.80)
Engaging learners	30 (38.00)	45 (57.00)	4 (5.07)
Time limitation of designing MOOCs	22 (27.80)	51 (64.60)	6 (7.60)
Moderating discussion forum	16 (20.25)	56 (70.89)	7 (8.86)
Technical competency	16 (20.30)	52 (65.80)	11 (13.90)
Solving technical issue of learners	6 (7.60)	50 (63.30)	23 (29.10)
Getting learners' feedback	6 (7.60)	36 (45.60)	37 (46.81)
Institutional support	5 (6.33)	28 (35.44)	46 (58.23)
Internet Speed	5 (6.33)	32 (40.50)	42 (53.17)
Managing MOOC platform	8 (10.10)	39 (49.40)	32 (40.50)
Evaluation of learners' progress	14 (17.70)	46 (58.20)	19 (24.10)

Parentheses indicate percentage; Source: Thesis questionnaire given to instructors.

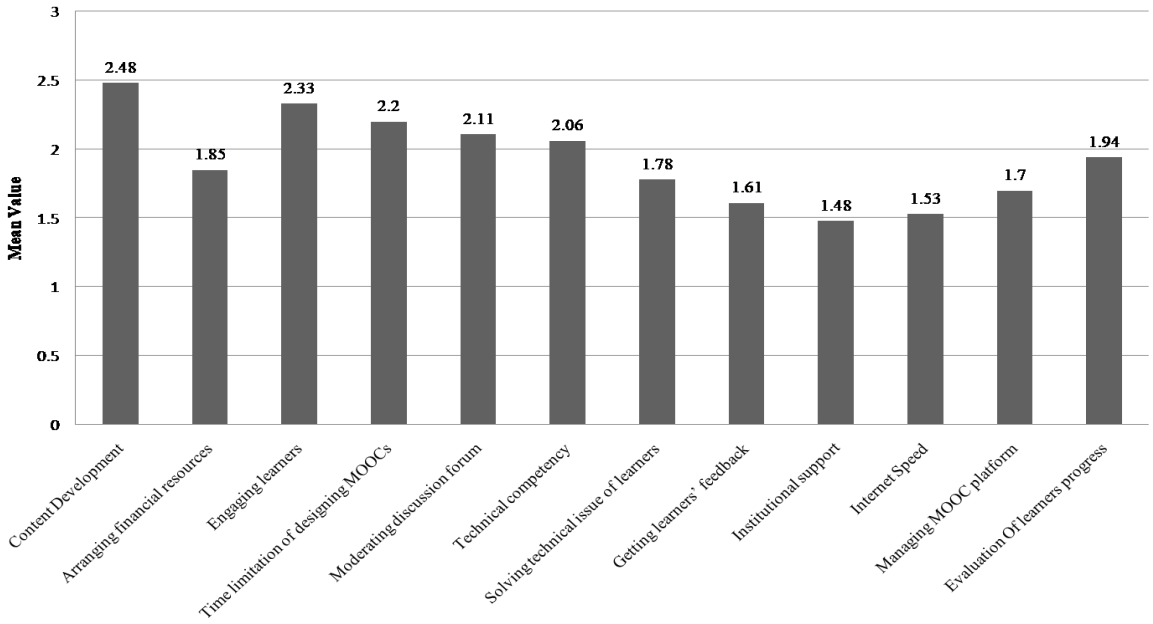

Fig. 1.

challenging. More than 50% of the instructors (58.23%) didn't perceive getting institutional support was a challenging task. About 53.17 per cent instructors also didn't feel it was a challenging task to get a good internet speed. Moreover, 40.50 per cent of the instructors felt managing MOOCs platform was not at all a challenging task while 10.10 % felt it was very challenging. The evaluation of the learner's progress was perceived to be somewhat challenging by 58.20 % of the instructors.

The bar chart shows the mean values of the perceived challenges in development of MOOCs. The results indicated that the most challenging task for any instructor was to develop the content (2.48) in MOOCs development process followed by engaging the learners (2.33) during the course. It was also found that time limitation (2.2) in designing MOOCs, moderating discussion forum (2.11) and technical competency (2.06) were other highly challenging tasks. The least challenging tasks were evaluating learner's progress (1.94), arranging financial resource (1.85), solving technical issues (1.78) of the learners, managing MOOCs platform (1.7) and getting learner feedback (1.61). Furthermore, internet speed (1.53) and institutional support (1.48) were other least challenging tasks in MOOCs development.

4. DISCUSSION

Considering the bar chart one can clearly notice that the content development (2.48) of MOOCs was most critical among the different type and level of challenges faced by the instructors. Cleveland-Innes et al. [17] found that participant learning and online interaction are greatly influenced by course design and pedagogical ideas. However technical competency (2.06) and evaluation of learners (2.33) had mixed response. Some found it tough while the other easily handled it. There were also challenges like arranging financial resources (1.85), solving technical issues (1.78), managing MOOCs platform (1.7), getting learner feedback (1.61), internet speed (1.53) etc. faced by the instructors. In cases, using peer assessment appropriately might benefit both the learners who provide the feedback and the learners who receive feedback [18,19]. Result showed that these were moderate problems and were tackled by the instructors. There was availability of institutional support to the instructors in developing MOOCs. Most of the instructors have replied that it was not at all challenging for this dimension which is a good sign for the development of more and more MOOCs for the learners in coming future as these instructors were given the support from the institutes. Foreign training and collaboration along can be of great help in tackling the challenges like content development, learner's evaluation. These extra aid can boost the performance of the instructor while expert training among themselves can be of great help in tackling the least challenging task like internet speed, getting learner's feedback etc.

5. CONCLUSION AND RECOMMENDATIONS

The study aimed to document the perceived challenges faced by the instructors in designing and development of MOOCs in India. Content development was found most critical among the different type and level of challenges faced by the instructors. Technical competency and evaluation of learners obtained mixed response There were also challenges like arranging financial resources, solving technical issues, managing MOOCs platform, getting learners feedback, internet speed etc. faced by the instructors. Engaging learners, time pressure during the design and development of MOOCs and technical proficiency were the major challenges found during the study. Overall this study will open new vistas of future research especially in content of instructors involved in designing and development of MOOCs. Therefore, the study recommended that the instructors should seek foreign training and collaboration to overcome the most challenging tasks but seek expert training among themselves to solve the problem of least challenging tasks in the designing and development of MOOCs.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. McFall-Johnsen JK, Lauren Frias M. A third of the global population is on coronavirus lockdown—here's our constantly updated list of countries and restrictions. Business Insider Australia; 2020.
2. UNESCO. COVID-19 Educational Disruption and Response; 2020. Available:https://en.unesco.org/news/290-million-students-out-school-due-covid-19-unesco-releases-first-global-numbers-and-mobilizes
3. Ministry of Human Resource Development. National Education Policy; 2020. Available:thttps://www.mhrd.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
4. Ministry of Human Resource Development. SWAYAM, Government of India; 2017.
5. Siemens G. Massive open online courses: Innovation in education. In McGreal, R., Kinuthia W., & Marshall S. (Eds), Open educational resources: Innovation, research and practice. Vancouver: Commonwealth of Learning and Athabasca University; 2013;5–16.
6. Onah DF, Sinclair J, Boyatt R. Dropout rates of massive open online courses: behavioural patterns. EDULEARN14 proceedings. 2014;1:5825-5834.
7. Ferguson R, Sharples M. Innovative pedagogy at massive scale: teaching and learning in MOOCs. In European Conference on Technology Enhanced Learning. Springer, Cham. 2014;98-111.
8. Khalil H, Ebner M. MOOCs completion rates and possible methods to improve retention-A literature review. In EdMedia+ innovate learning. Association for the Advancement of Computing in Education (AACE). 2014;1305-1313.
9. Shah D. Monetization over massiveness: breaking down MOOCs by the Numbers in 2016: A review of MOOC stats and trends in 2016; 2016. Available:https://www.edsurge.com/news/2016-12-29-monetization-over-massiveness-breakingdown-moocs-by-the-numbers-in-2016.
10. Ebben M, Murphy JS. Unpacking MOOC scholarly discourse: A review of nascent MOOC scholarship. Learning, Media and Technology. 2014;39(3):328-345.
11. Hew KF, Cheung WS. Students' and instructors' use of massive open online courses (MOOCs): Motivations and challenges. Educational research review. 2014;12:45-58.

12. Venkataraman B, Kanwar A. Changing the tune: MOOCs for human development. MOOCs and open education around the world. 2015;206-217.
13. Kaveri A, Gunasekar S, Gupta D, Pratap M. Decoding the Indian MOOC learner. In 2015 IEEE 3RD International Conference on MOOCS, Innovation and technology in education (MITE) (pp. 182-187). IEEE; 2015.
14. Jacoby J. The disruptive potential of the Massive Open Online Course: A literature review. Journal of Open Flexible and Distance Learning. 2014;18(1):73-85.
15. Phatak DB. Adopting MOOCs for quality engineering education in India. In: Proceedings of the International Conference on Transformations in Engineering Education. Springer India. 2015;11-23.
16. Zhu M, Bonk CJ, Sari AR. Instructor Experiences Designing MOOCs in Higher Education: Pedagogical, Resource, and Logistical Considerations and Challenges. Online Learning. 2018;22(4).
17. Cleveland-Innes M, Briton M, Gismondi M, Ives C. MOOC instructional design principles: Ensuring quality across scale an d diversity. In MOOCs in Scandinavia conference. Stockholm, Sweden; 2015.
18. Dochy FJRC, Segers M, Sluijsmans D. The use of self-, peer and co-assessment in higher education: A review. Studies in Higher education. 1999;24(3):331-350.
19. Barak M, Rafaeli S. On-line question-posing and peer-assessment as means for web-based knowledge sharing in learning. International Journal of Human-Computer Studies. 2004;61(1):84-103.

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle4.com/review-history/75053