# Mushroom cultivation MOOC at Kerala Agricultural University: Garrett Ranking Analysis of Constraints to enhance Online agriculture learning


**ABSTRACT**

Participants in this extensive Massive Open Online Course (MOOC) on mushroom cultivation will gain a wealth of knowledge and useful skills necessary for cultivating a wide variety of mushrooms. In this study, the Center for e-learning at Kerala Agriculture University will analyse the barriers to mushroom growing as part of a MOOC. 30 participants in the MOOC course were chosen at random to participate in the study as responses. Using the specified sampling size and data collection methodology, an ex post facto research design was employed for the study. The requirements in the MOOC course were prioritized using the Garrett ranking technique after the data were statistically analysed. Results revealed that 55.06 per cent of the respondents have the economic constraint that is the power/ electricity usage costs more to them, of the technological challenges encountered, interacting with the resource person less frequently comes in the rank first with 60.13 per cent,the biggest personal challenge is developing skill-oriented knowledge, which is difficult and it has been ranked first with 67 per cent, Personal commitments, such as employment, family duties, health concerns etc., ranks first with 62.53 in terms of situational limitations and 66 percent of the respondents rranked first that there is more number of theory classes with minimum hands-on experience in psychological challenges



**Keywords**: Mushroom Cultivation; MOOC; Centre for e-learning, Kerala Agriculture University; Constraints; Suggestions; Garrett ranking approach.




## 1. INTRODUCTION

Massive open online courses, or MOOCs, are revolutionizing the field of distant learning in such a novel way that educational institutions, experts in the field, and the media are taking notice (Goh et al, 2018). A unique path for agricultural diversity and nutritional enrichment, mushroom production sits at the crossroads of traditional farming methods and modern sustainable food solutions. Mushrooms are an important part of the world's agricultural scene because of their many uses, from their nutritional value to their therapeutic qualities. Kerala Agriculture University's Massive Open Online Course (MOOC) on Mushroom Cultivation is a crucial step towards spreading knowledge in this sector, given the increased interest in it.

Once considered a niche industry, mushroom farming is gaining popularity due to its potential to foster environmentally friendly agriculture, provide financial opportunities, and aid with food security. A key component of bridging traditional knowledge with contemporary farming practices is Kerala Agriculture University's MOOC on mushroom cultivation.

Participants in the course get a grasp of the many applications, growing techniques, and varieties of mushrooms as they delve into the intriguing field of mushroom science.

But there are obstacles to overcome when starting a mushroom farm. Aspiring mushroom growers must recognize and overcome these obstacles if they are to succeed. By using the Garrett ranking approach to prioritizes and systematically assess these issues, this research work seeks to provide insight on the obstacles encountered by respondents enrolled in Kerala Agriculture University's Mushroom Cultivation MOOC. We hope to provide insightful analysis that will improve the MOOC's efficacy and further enable people to learn more about mushroom growing by delving into the challenges faced by participants.

## 2. MATERIAL AND METHODS / EXPERIMENTAL DETAILS / METHODOLOGY

Examining the study's goals and objectives, sampling region, sample size, and ex-post facto data collection technique. A research methodology was utilised to examine the difficulties faced by participants in the mushroom cultivation MOOC and offer suitable suggestions.

A list of all the respondents who attended the MOOC course from Centre for e-learning, Kerala Agriculture University was collected. The respondents in the study are taken randomly who attended the MOOC course in mushroom cultivation for the research study, 30 respondents were selected. A questionnaire was developed and pilot study was conducted which helped in gaining the confidence to proceed the questionnaire further and with suitable modifications were incorporated in the final interview schedule. The final questionnaire was shaped in using Google forms as an online questionnaire and its link was sent via e-mail and WhatsApp to the respondents and it was followed up with telephone call.

The Center for e-learning at Kerala Agriculture University provided a list of all the responders who took the MOOC course. Those who took the MOOC course on mushroom cultivation are chosen at random as respondents. 30 respondents were chosen for the research investigation. After a pilot research and questionnaire development, the necessary revisions were integrated into the final interview schedule, giving the questionnaire the confidence to move forward. A phone conversation was conducted after the final questionnaire was created using Google Forms and distributed as an online form. The respondents received the link by email and WhatsApp.

### METHODOLOGY

The information gathered from the selected respondents was categorized, totaled, examined, and displayed in a table format. The challenges were categorized as technical challenges, personal challenges and situational challenges. The conclusions that were drawn from the data analysis were crucial and appropriately interpreted, implications and deductions were made. The information gathered was statistically examined and the challenges faced by the respondents were ordered according to Garrett's ranking methodology (Garrett and Woodworth 1969).

Garrett ranking method was employed to assess the issues that the researchers encountered. Using the formula, the respondents' orders of merit were converted into ranks. Garrett's ranking method was applied to determine the respondent's most important influencing factor. According to this methodology, participants were asked to rank each element, and the results of that ranking were then translated into a score value using the formula below:

Percent position = $100\ (R_{ij} - 0.5)/N_j$

Where $R_{ij}$ = Rank given for the ith variable by jth respondents

$N_j$ = Number of variables ranked by jth respondents

The Per cent position estimate is translated into scores using Garrett's Table. Following the addition of each person's score for each factor, the total value of the scores and the mean values of the scores are determined. The elements deemed most significant are those with the highest mean value.

## 3. RESULTS AND DISCUSSION

Table 1. shows the technical challenges that the responders experienced. Of the technological problems encountered, interacting with the resource person less frequently comes in the rank first with 60.13 per cent. These difficulties resulted from the fact that the classes were videotaped, which prevented the responders from speaking with the resource person. Reduced contacts with fellow learners are associated with the second rank. There is no contact amongst the responders and they are unable to communicate the knowledge they possess.

The respondents' personal challenges are displayed in Table 2. The biggest personal obstacle is developing skill-oriented knowledge, which is difficult and it has been ranked first with 67 per cent. The respondent receives no practical exposure because there is no contact class; only theory classes are offered.

The respondents' situational challenges are displayed in Table 3. Personal commitments, such as employment, family duties, health concerns, etc, ranks first with 62.53 in terms of situational limitations. The respondents might not have much time to devote to the MOOC courses because of their hectic job schedules or obligations to their families. It can be difficult to balance the responsibilities of coursework with obligations to your family, job, and personal life.

From the above-mentioned challenges, the following suggestions can be made:

**Enhance Real-time Interaction:**

Direct communication with resource person can be done by integrating live sessions or virtual office hours.

Explore real-time chat tools and discussion forums can be facilitated for immediate interactions among participants and instructors.

**Promote Peer Engagement:**

In order to promote cooperation among co-learners, encourage active participation in discussion forums.

Assign cooperative tasks or group projects to improve members' shared knowledge.

**Improve Accessibility:**

Streamline communication routes by integrating messaging systems.

To improve accessibility to course content, make sure the platforms are user-friendly.

**Incorporate Practical Components:**

Provide modules with hands-on, skill-focused activities and applications.

To close the knowledge gap between theory and practise, give students opportunity to gain practical experience, even in virtual settings.

**Flexible Learning Options:**

Provide seminars on tape for attendees with varying schedules.

Theory sessions should have flexible timetables to meet the needs of participants who have personal and professional obligations.

**Flexible Course Timings:**

To accommodate students with demanding work schedules, consider holding classes on weekends or during breaks.

Offer flexible attendance choices so that students can manage their academic obligations with their personal and professional commitments.

**Create Awareness and Support Systems:**

Raise awareness about the value of MOOCs to employers and family members.

Provide funds for support groups or counselling services to help participants deal with their own struggles.

**Enhance Institutional Support:**

Provide a structure of support for participants inside the organisation to help them with their unique issues.

Make sure there are open lines of communication so that people may ask for advice on getting over personal challenges.

Encourage students to ask questions, participate actively, and share their expertise with other students.

More contact classes can be planned in order to give the responses a more skill-oriented development.

Helping the responders set realistic short- and long-term objectives. Create checkpoints to track your progress and divide the homework into digestible portions. Realistic goal-setting and achievement reduce stress and facilitate time management.

Including hands-on, interactive learning activities in the tasks. Activities that allow students to put their theoretical knowledge to use in practical situations include experiments, group projects, case studies, and simulations.

Use video conferencing solutions to encourage real-time interaction and discourse.

Provide online discussion boards or message boards where students can post questions and receive professional responses.

Include collaborative platforms and technologies that facilitate information sharing, project teamwork, and group discussions.

**Table 1. shows the technical challenges faced by the respondents**

| **Technical challenges** | **Percentage** | **rank** |
|---|---|---|
| Reduced interaction among co-learners to have shared knowledge | 55.7 | II |
| **Less interaction with the resource persons** | **60.13** | **I** |
| Requires additional storage device to store the course material | 34.16 | III |

**Table 2. shows the personal challenges faced by the respondents**

| **Personal challenges** | **Percentage** | **rank** |
|---|---|---|
| Problem with language of the resource person | 48.66 | IV |
| Course material quality is lacking | 63.13 | II |
| Timeliness of information in the material should be provided | 57.53 | III |
| Time availability to login daily for getting the course content | 36.5 | VI |
| The language is highly professional to be understood | 41.06 | V |
| **Difficulty in development of skill-oriented knowledge** | **67** | **I** |

**Table 3. shows the Situational challenge faced by the respondents**

| Situational Challenges | Percentage | Rank |
|---|---|---|
| Personal commitments such as work, family responsibilities, health issues etc. | 62.53 | I |
| Not having access to necessary software, equipment, or study materials can impede learning | 54 | III |
| Distractions at home that can impact focus and concentration during the courses | 46.36 | IV |
| Workload or academic commitments | 61.16 | II |

## 4. CONCLUSION

The study concluded by highlighting the main difficulties that participants in a MOOC context experienced, with a focus on situational, personal, and technical barriers. Technical difficulties were common, such as the inability to communicate with other students and resource people because classes were videotaped. One of my personal challenges has been learning skill-oriented material without having any hands-on experience in contact classes. The necessity for flexible learning alternatives was highlighted by situational challenges, particularly those related to personal responsibilities and time limits. These issues are intended to be addressed by the following recommendations: raising awareness and developing support networks; encouraging peer participation; increasing accessibility; adding practical components; providing flexible learning alternatives; and strengthening institutional support. By putting these suggestions into practise, MOOC hosts may create a more flexible and encouraging atmosphere that will enable participants to learn well in the face of a variety of obstacles.

## REFERENCES

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