



MOOC

on

Life Skill for Engineers Level I

(March 15 – May 13, 2021)

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Commonwealth Educational Media Centre for Asia

A Report

on

Life Skills for Engineers MOOC

Level I

INTRODUCTION

“The greatest discovery of my generation is that a human being can alter his life by altering his attitudes” -William James (Psychologist)

It is the time which is very demanding and challenging and to deal with it psychosocial competences of an individual are to be developed. In this age of complexity and turbulence, resulting from unpredictable factors coming together, one must develop the capability to think, strategize, plan, execute & lead successfully. Globalization, digital technology and new demographics are colluding to create a new environment of complexity and are demanding new ways of thinking. Inculcating & imbibing Life skills in addition to engineering knowledge is essential, desirable & vital in addressing current and future challenges. Engineering is not just about designing, planning, implementing, executing and measuring the impact of various technologies. A good engineer needs to be a perfect amalgamation of the knowledge in his discipline and life skills. Life skills bring tremendous refinement in professionals' and engineers' behavior, prepare them for the change and the way to approach their professional work, job market and finally their life. Inculcating Life skills can make youth, students, and engineers more positive in their attitude and will bring overall wellbeing to them.

This course on Life Skills was designed for the youth, students and engineers and was planned in such a way that it will be very informative as well as engaging. The level one of the course was launched and has completed its six weeks along with two weeks extension for completing the course. The course required approximately three to five hours of time each week. Designed to accommodate learners' busy schedules, the course offers flexibility with options for learning the content. The learner will learn from readings, videos, discussions with co-learners and instructors, meaningful exercises, quizzes, and short assignments. Certification is available for those who wish to complete all required exercises and quizzes.

LEARNING OUTCOMES

Participants will be able to:

Develop effective verbal and non-verbal communication skills and Communicate effectively in personal as well as professional settings.

Analyse the professional or personal situations critically and perform accordingly.

Understand the importance of morals and ethics of the engineering profession and apply the same.

Acquaint themselves with leadership skills and the approaches of leadership.

Appreciate the significance of life skills in professional spaces through this course on Life Skills for Engineers.

COURSE DEVELOPMENT

The Life Skill for Engineers MOOC has been developed for two levels having 6-6 modules each level and the course development team prepared text modules, presentations, and videos explaining the content of the module. Further quizzes were also prepared for evaluating the learners. Course development team underwent a lot of research and discussion with experts for finalising the topic of the modules. Once after the finalisation of the topics an outline for the module content was drawn and then the text materials were prepared.

Course team: The members of the team are experts of Engineering and Life Skills and come from different universities, institutions and from field. The team members are Prof. I. Ramabrahmam, Vice Chancellor, Central University of Odisha; *Prof. C. Muralikrishna*, Dept. of English, Osmania University; *Prof. Sunita Mishra*, CELS, University of Hyderabad; *Dr. G. Padmaja*, Centre for Health Psychology, University of Hyderabad, and *Mr. Attaluri Viswanath* Industry Expert. Dr. Manas Ranjan Panigrahi, SPO, Commonwealth Educational Media Centre for Asia has coordinated the complete course from its initiation to reuniting the course. Dr. Monica Nagpal, CEMCA and Mr. Saurabh Mishra PO CEMCA were part of the operations team.

Course Duration: The level one of the course is developed in English and it is spanned over 6 weeks covering one module each week along with one live interactive session by experts each week. The course required its learners to spend only 3-5 hours each week.

Course Contents: Course contents included 6 modules having text material, video, presentation and transcript for each module. Course contents are depicted in the table 1 below.

Table 1

Course Contents

S. No	Module	Videos
1	Week 0	Introductory Video

2	Effective Communication Skills for Engineers - 1 (Basic-LSRW & Non-Verbal Skills)	<ul style="list-style-type: none"> • Introduction to Communication (LSRW Skills) • Chain of Communication • Elements of Human Communication • Common Barriers to Effective Communication • Creativity and Negotiation in Communication
3	Effective Communication Skills for Engineers - 2 (Job Application, Oral Presentation Skills)	<ul style="list-style-type: none"> • Constituents of Job Application Letter • Oral Presentation Skills • Signposting • The Content of Presentations • Factors Aiding Effecting Presentation • Visual Aids for Oral Presentation
4	Thinking Critically - 1	<ul style="list-style-type: none"> • Introduction to Thinking Critically • Paradigms in Critical Thinking • Some more aspects of Critical Thinking • Mind Mapping: A way to do Critical Thinking • Critical Thinking in the Field of Engineering • Critical Thinking in Engineering- Case Studies
5	Importance of Ethics in engineering profession 1 - Introduction & evolution	<ul style="list-style-type: none"> • Introduction to Ethics • Ethics- Genesis and Theories • Ethics in Engineering • Codes of Ethics in Engineering- International • Codes of Ethics in Engineering- National • Moral/ Ethical Dilemmas and Hierarchy of Moral Values • Factors affecting Moral Responsibility & Degrees of Responsibility
6	Building Leadership Capabilities in Engineers - An introduction	<ul style="list-style-type: none"> • Introduction • Importance of Leadership • Meaning of Leadership • Process and Functions of Leadership • Leadership Styles • Some Recent Developments
7	Effective Leadership - Models, Traits and Qualities	<ul style="list-style-type: none"> • Introduction • What makes a person a leader? • Models and Theories of Leadership- Universalist Theories

		<ul style="list-style-type: none"> • Models and Theories of Leadership- Behavioural Theories • Models and Theories of Leadership- Contingency Approaches
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Apart from the course modules, it was planned to conduct live online sessions for providing an opportunity to participants to listen to and interact with experts from the field of engineering. Each week one live session was conducted based on the modules of the week. There were 6 online sessions which were organized during the MOOC and all the videos of the sessions and their PPTs are available for future reference and use. The live sessions organized are listed out in the table 2 below:

Table 2

Live Sessions

Weeks	Live Session	Experts
Week 1	Effective Listening Skills	Dr.C.Muralikrishna
Week 2	Effective Writing Skills	Dr.C.Muralikrishna
Week 3	Understanding Critical Thinking	Dr. Sunita Mishra
Week 4	Dealing with Ethical Dilemma: How to address in real life situations	Mr. Attaluri Viswanath Ms. Ramya Chitrapu
Week 5	Leadership During Crisis	Dr. G Padmaja
Week 6	Leadership and Emotional Intelligence	Dr. G Padmaja

Eligible Learners: MOOC on Life Skills for Engineers is designed for engineering students and in-service engineers, but will certainly bring benefits to all. Anyone interested in improving life skills would enjoy participating in this MOOC.

Certification: The course provides two levels of certification which are available based on the level of participation and completion of tasks/activities:

Certificate of Completion requires:

Watching all the video lectures

Scoring at least 60% on the quizzes (in each quiz)

Active participation and post in at least 4 discussion forums during the course

Certificate of Participation requires:

Watching at least 80% of the video lectures

Scoring at least 50% on the quizzes (in each quiz)

Active participation and post in at least 4 discussion forums during the course

COURSE LAUNCHING AND REGISTRATION

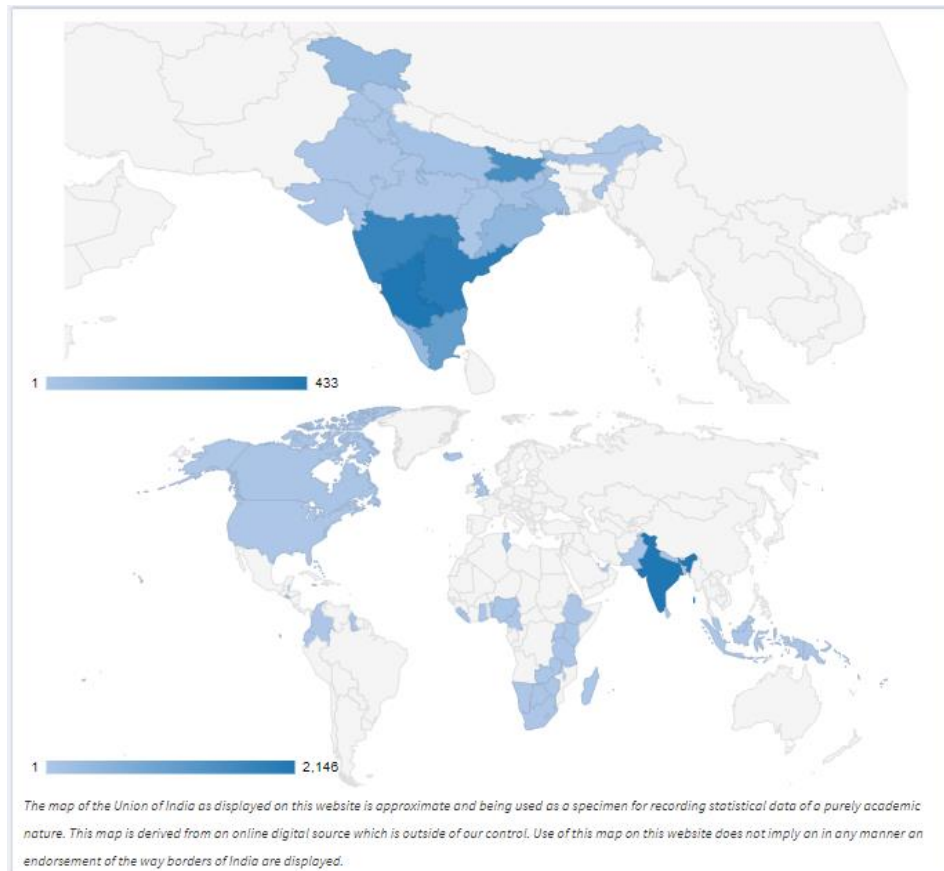
The Course was launched on MookIT platform designed and developed by IIT Kanpur in collaboration with the Commonwealth of Learning (COL), Canada. The platform uses up to date learning design with simple accessible technology. The course was promoted through the CEMCA official Facebook page, various Whats app groups and sending emails to different institutions and individuals.

Learners Details

The registrations to the course were from across the globe having most learners from India. A total of 2654 learners from 58 countries registered and participated in the course. It was found that 2149 learners were from India and the remaining approximately 500 participants were from 58 countries. From India also the participants were scattered throughout India. The distribution of participants from India and across the world can be seen in the Figure 1

Figure 1

Distribution of Participants



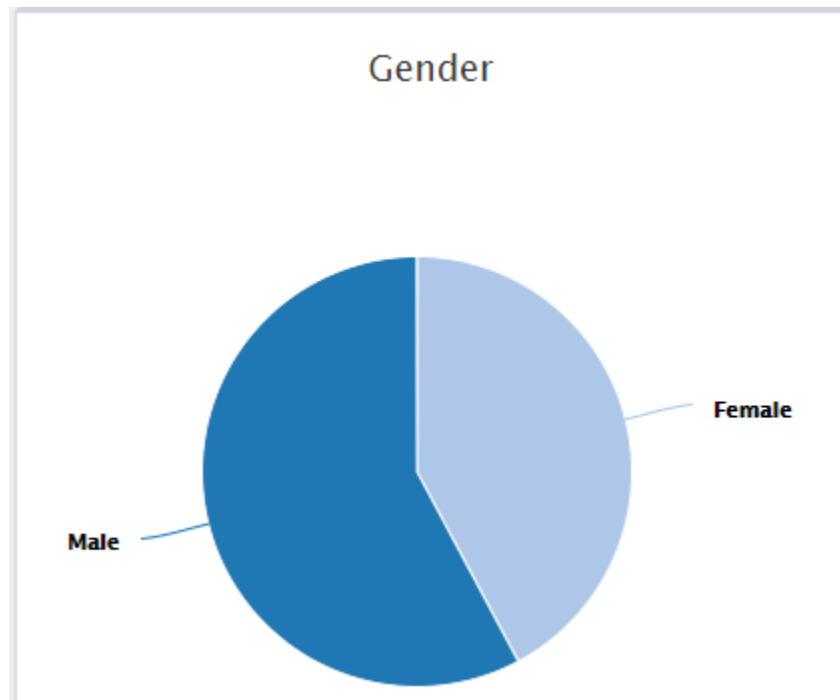
The Figure 1 shows that from India the most number of participants were from Karnataka (433), Andhra Pradesh (400), Maharashtra (357), Bihar (303) and Tamilnadu (225) respectively. On the other hand the participants globally were scattered in 58 countries.

Gender

The gender distribution of participants was properly distributed. It was found that out of the participants who declared their gender 1540 were Male and remaining 1120 were females. Figure 2 displays the gender distribution.

Figure 2

Distribution of Gender

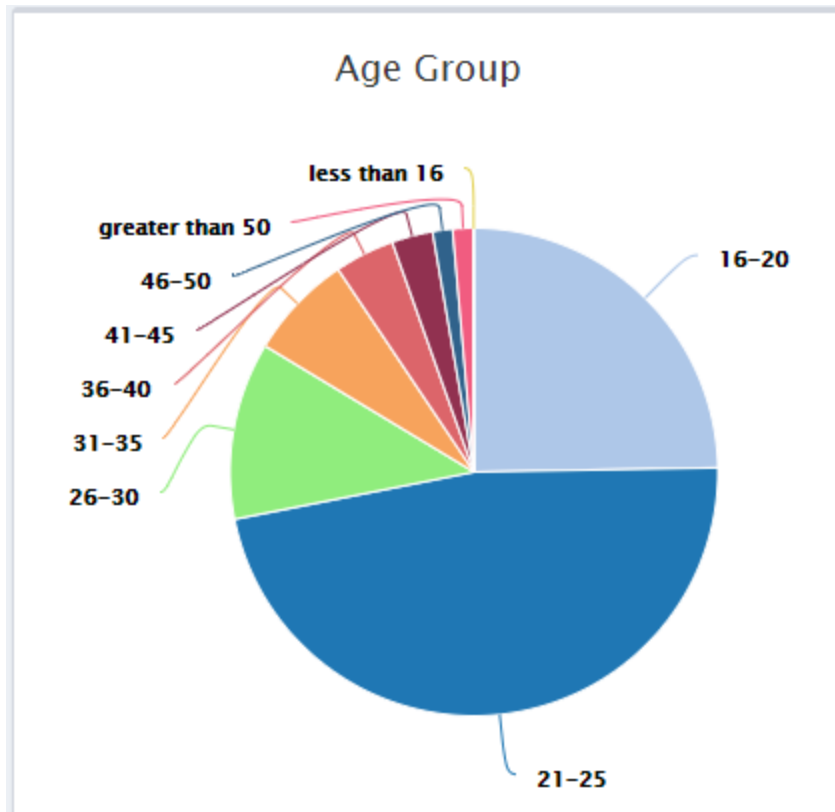


Age Group

It was tried to understand that participants belonged to which age group and Figure 3 shows the distribution of age.

Figure 3

Distribution of Age

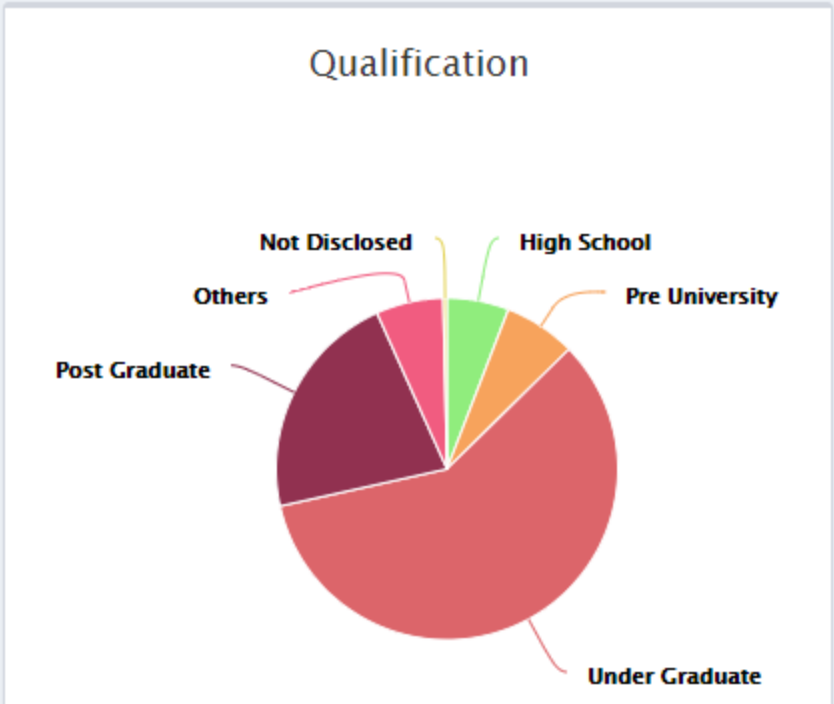


It was observed that the most no of participants (1249) were from age group 21-25 and 655 participants belonged to 16-20 and 311 participants were 26-31 year of age. Remaining were almost equally distributed among different categories.

Qualification

The participants who joined the course belonged to different levels of qualifications. Figure 4 displays the qualification of the participants.

Figure 4
Distribution of Qualification

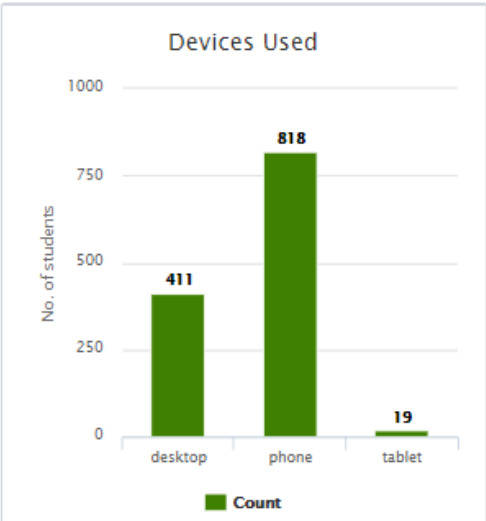


It can be observed from Figure 4 that most of the participants i.e more than 50 percent of participants were undergraduates (1517) and approximately 24 percent participants were post graduates (561).

It was also tried to see which device was used by most of the participants which might help the technical team to make the portal more friendly with that kind of device.

Figure 5

Device Used



The data in Figure 5 shows that phones were used the most i.e 818 participants worked through mobile phones and 411 used laptop or desktop computers for accessing the course and only very few i.e 19 participants used tablets.

Procedure

It is always necessary to draw a complete activity planner for conducting any activity and for conducting this online course a complete procedure was planned and adopted for successfully offering the MOOC. The first and foremost comes the registration so the MOOC was announced a month prior for registrations and various social media platforms facebook, whatsapp and direct communication with institutions was established for promoting the same and reaching out to a maximum number of learners. Registrations were kept open even after the course had started for keeping the lateral entry option open for participants to join.

The course portal had an opportunity for creating announcements and sending to the registered participants with just one click. So, two days prior to the course a welcome note was sent to the participants covering an overview of activities to be done by them. The modules were released week wise on Monday morning and announcement was made simultaneously through mail to all the registered participants. Quiz of the related modules was also released every weekend with an announcement email. The quizzes were kept open till the end and all the quizzes were closed on May 13, 2021.

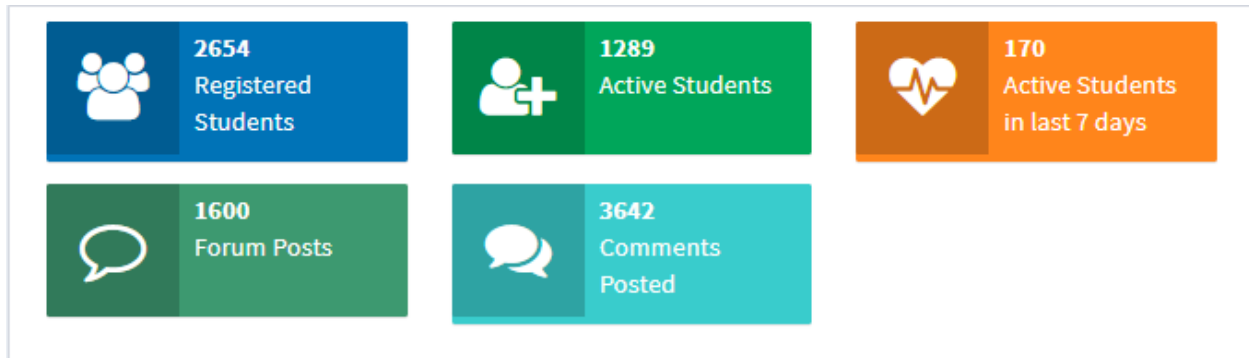
Apart from regular course content an online session was organised through zoom every week for making the course interactive. The announcements for the session were made well in advance on the portal and through emails. The online sessions were well received by the participants. The sessions were later posted on the platform as a resource.

Discussion Forums and Learners Interaction

Discussion forums play an important role in an online course where forums are a medium for getting your queries answered and it also provides a platform to get along with new discussion threads. Participation in discussion forums was a criterion of certification in the Life Skill for Engineers MOOC. Also three discussion points were started by the instructors to probe the participants to discuss further. Participation in minimum four forums was mandatory for successfully completing the course. The data shows that the participants were found enthusiastic while participating in the forums.

Figure 6

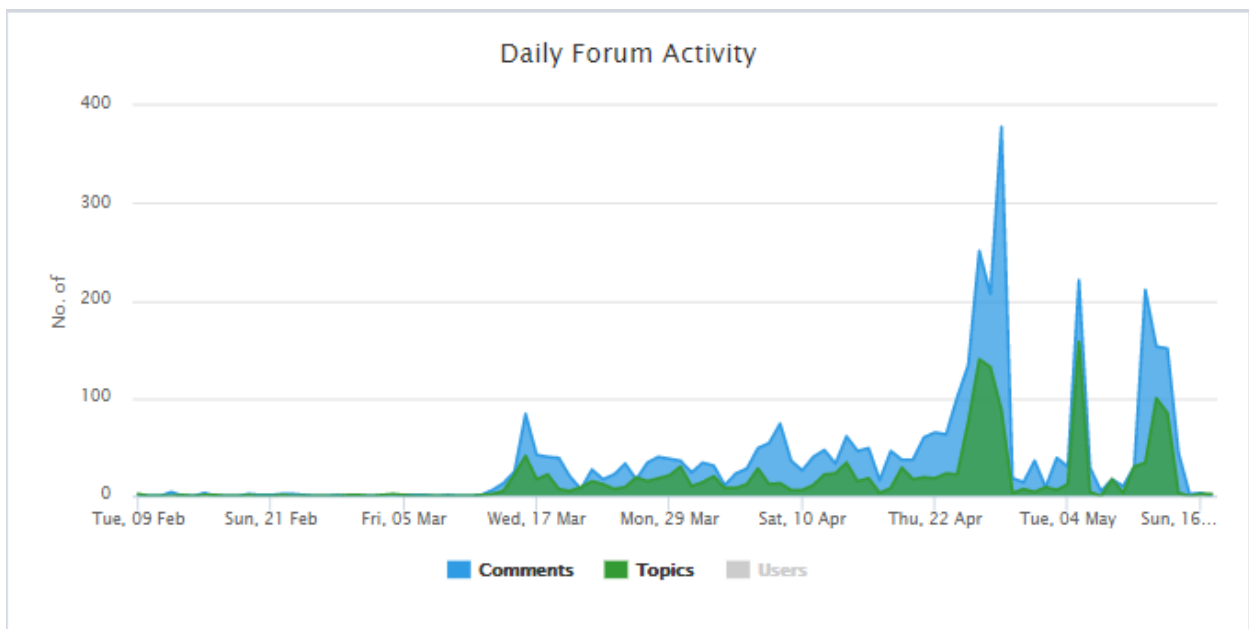
Forum Participation



Participants created 1600 new discussion forums and 3642 comments were posted in the already created forums.

The Figure 9 below shows the distribution of participants who have either commented or created the forums.

Figure 7
Participation in Forums across the Month



Participants have enthusiastically participated in the forums and it was found that they have replied to queries of the co-participants and discussed the topics covered in the week amongst each other.

Forums created were general as well as content and module specific. Participants also recorded their forums discussions for ease of access as the feature has been provided by the platform.

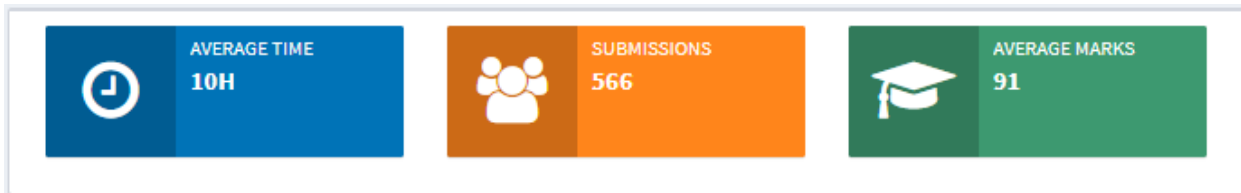
Evaluation

Evaluation is a broad term and includes tests or examinations and these tests are an important component of any kind of course or training and measuring it is necessary to understand the learners and the course content. The course was divided into 6 weeks and every week one new module was released and towards the end of the week a quiz related to the module was released. An opportunity to retake or re attempt the quiz was also given to the participants. There were six quizzes which were released during the MOOC.

Figure 8, Figure 9, Figure 10, Figure 11, Figure 12 and Figure 13 show the quiz attempts and average scores achieved by the participants.

Figure 8

Quiz 1 Status



Quiz 1 was attempted by 566 participants and the average marks received were 91 out of 100. A distribution of marks for Quiz 2 is also shown in the Figure 9.

Figure 9

Quiz 2 Status

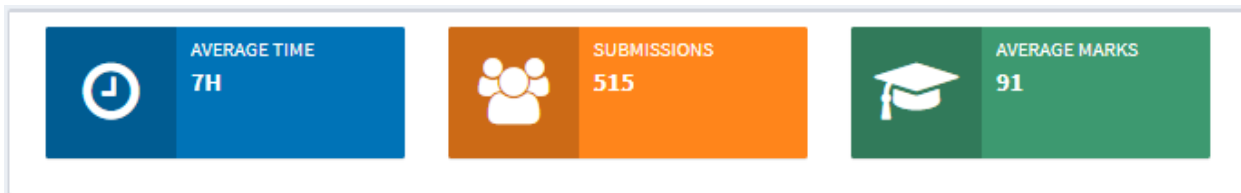


Figure 9 shows that Quiz 2 was attempted by 515 participants and 384 participants scored above 90. The average marks received were 91.

Figure 10

Quiz 3 Status

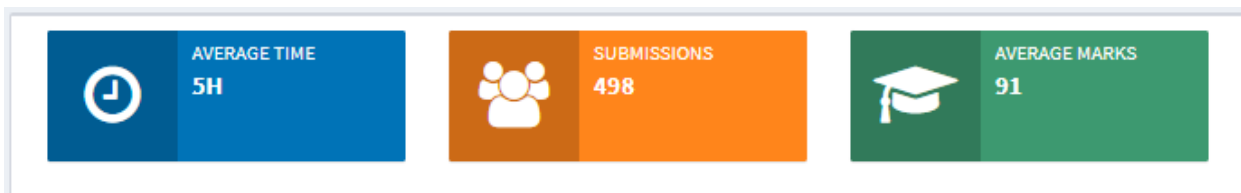


Figure 10 displays the result of quiz 3, it is visible that 498 participants attempted the quiz and the average marks achieved were 91.

Figure 11

Quiz 4 Status

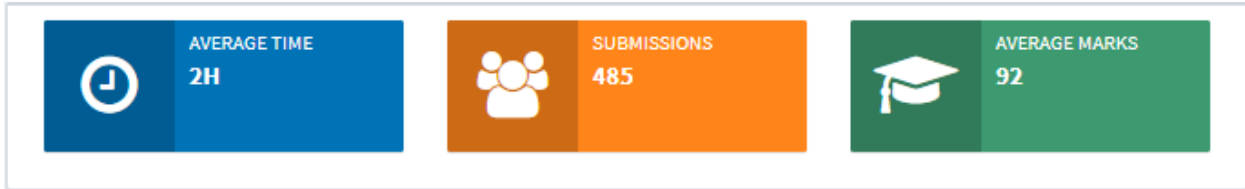


Figure 11 shows that quiz 4 was attempted by 485 learners and the average marks achieved were 92.

Figure 12

Quiz 5 Status

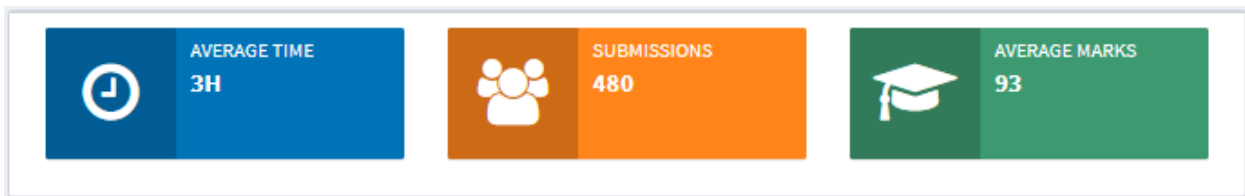


Figure 12 shows that quiz 5 was attempted by 480 learners and the average marks achieved were 93.

Figure 13

Quiz 6 Status

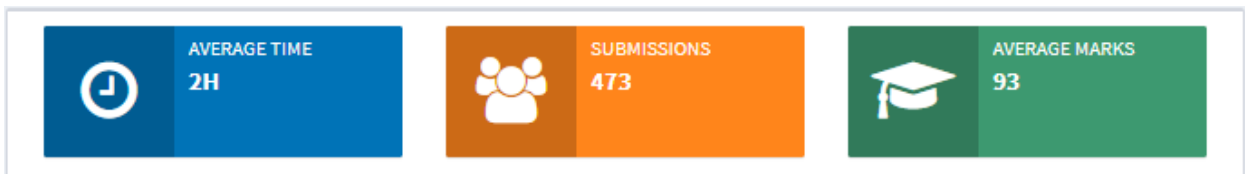


Figure 13 shows that quiz 6 was attempted by 473 learners and the average marks achieved were 93.

Participation in quizzes and average scores shows that learners have been actively involved in the course and have attempted quizzes and average scoring was above 90 in all the quizzes.

Learners Achievement (Certificate awarded)

Learners have been involved actively with the Life Skill for Engineers MOOC and the activity was seen on the platform. Figure 14 shows the interaction of the participants.

Figure 14
Learners Engagement

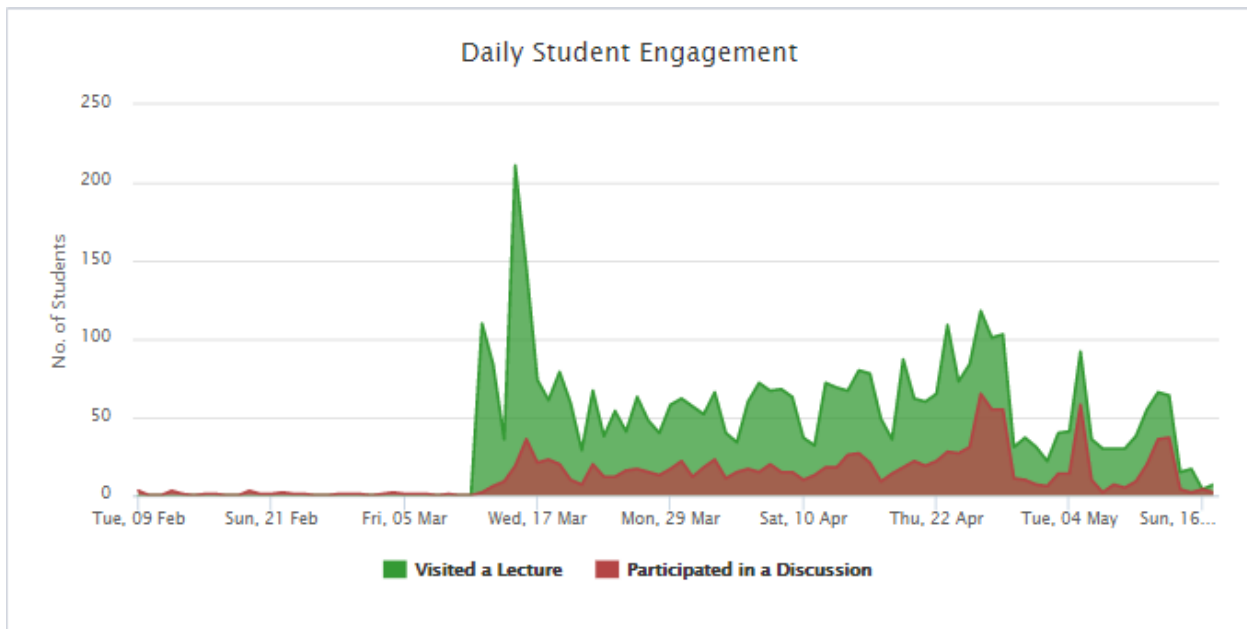


Figure 14 shows the participation of learners in lecture and forums both. It is visible that all the students who landed on the platform had participated in both the activities. The course provided two opportunities for certification, and it was found that the competency certificate was attained by 234 participants whereas participation certificates were attained by 30 participants. So, in total 264 certificates were awarded to participants.

CONCLUSION

The third cycle of Life Skill MOOC for Engineers was announced on the demand from the learners and institutions as at the time of pandemic life skills have a vital role to play. The MOOC was spanned over 6 weeks and ran from March 17, 2021 to May 13, 2021. Taking the request of the learners and participating countries' duration of completing the course was increased by two weeks. Participants from across the globe showed their interest by participating in the same. Forums and the discussions in the forums showed an active engagement of participants with their co-participants and instructors. Instructors were also actively engaged in replying to the queries of the participants along with posting new discussion threads. A new component of an online live session was included in the course which was taken positively by the learners. Further it was added as a resource for all the participants who could not join during the live session. Live session gave an opportunity to learners to interact with their instructors.

DIFFICULTIES/CHALLENGES LESSON LEARNT

Online courses have the irony that many join but only few reach to complete it. As participants register and forget about the course or lose interest. The certification shows a similar decline and gap in the number of participants and number of participants who could complete it. Blended approach helped up to some extent but still there existed a big gap.

RECOMMENDATION

Interaction is the key to the success of the teaching learning process. MOOC is one such idea where participants have almost no interaction with their instructors, bringing in the opportunities for interaction or personal touch can help make it successful.

Online live sessions with instructors can also bring in a platform for discussion with the instructors.

Assignment, projects or case studies can also bring some kind of encouragement in the participants.