

# Innovative Strategies in Implementation of Moodle in Professional Education

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**Abstract:** *As an Assistant professor working in the Department of civil engineering, Malnad College of Engineering, Hassan, Karnataka, I have attended a 2 weeks AICTE sponsored Faculty Development Program at DYP College of Engineering, Pune from the 4<sup>th</sup> to the 15<sup>th</sup> of November 2019, Outcome Based Education (OBE) in Professional Education: Objectives, Best practices and Measurement of Outcomes. Hands on session on MOODLE (Modular Object Oriented Dynamic Learning Environment) was a part of the Program. In this review paper I have presented the possibility to explore moodle at the course level as a course faculty, program level, at the Institute level and at the Inter-Institute level. This work can be further refined with detailed work and can become a dynamic model and inspiration to align with the norms laid by the National Board of Accreditation in the teaching learning.*

**Keywords:** Teaching-learning, Innovation, moodle, implementation, teacher

## 1. Introduction

The teacher in professional education today, has to perform a wide range of tasks besides teaching. These tasks are to adhere to the standards of education prescribed by the National Board of Accreditation, Outcome Based Education is targeted at achieving desirable Outcomes in terms of knowledge, skills, attitudes and behaviour. Education has to be outcome based the goals being specific, measureable and attainable. The teacher's role has undergone a paradigm shift to the role of a facilitator. He will have to adopt an integrated approach to attain the goals of the various roles he is performing at various levels in the institution.

Gnomio MOODLE is an open source cloud based online learning environment facilitating e learning. It creates a virtual active classroom, on private website with administrative privileges to the teacher. Based on pedagogical approach, it integrates flipped classroom and promotes self learning. It supports documentation, administration, progress tracking of students, delivery of courses and reporting. It gives attainment in the form of graphs. It enables SCORM (shareable content object reference model{all types of files like word, pdf, excel, audio, video})usage. Criteria in NAAC, requires the use of effective teaching with learning management systems (LMS) In this context the MOODLE (Modular open source dynamic learning environment) provides a very appropriate platform for effective implementation of the criteria of teaching learning at the course level, program level, institute level and Inter-Institute level.

## 2. Methodology

The methodology will demonstrate the implementation of moodle, integrating it into the present practices of teaching learning. It will show that at many places elimination of the

traditional clerical practices that the teacher has to follow in fulfilling his responsibilities and reflect on the new, efficient, and appropriate practices which fulfil the tasks effortlessly but more effectively. It reveals the fact that adopting the new moodle based practices are more relevant to the present context both to the student and the teacher. Communication and access to people, sharing of resources and documentation at the fingertips is today a common man's everyday practice, whether is he completely aware of it or not. This paper points out to the inevitability of working and communicating, sharing and interacting anytime anywhere in teaching learning. It proves that as this method is already in practice in all aspects of our daily life, it will naturally align with the teaching learning process as well, more so in the Outcome based professional education.

### 1) Implementation at Course level

- (a) For conducting test and taking course feedback
- (b) For conducting quiz (flipped classroom)

### 2) Implementation at Program level

- (a) Integrated approach to achieve goals of various roles.

### 3) Implementation at Institute level

- (a) In conducting Hands on training session for faculty members.

### 4) Implementation at Inter -Institute level

- (a) Participating in Interactive session as resource person

The process:

### 1. Implementation at Course level

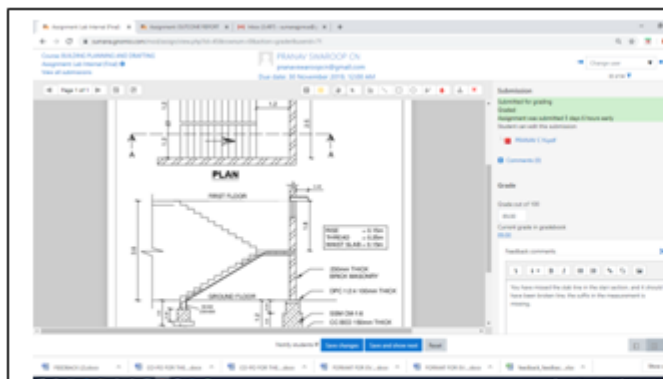
- (c) For conducting test and taking course feedback



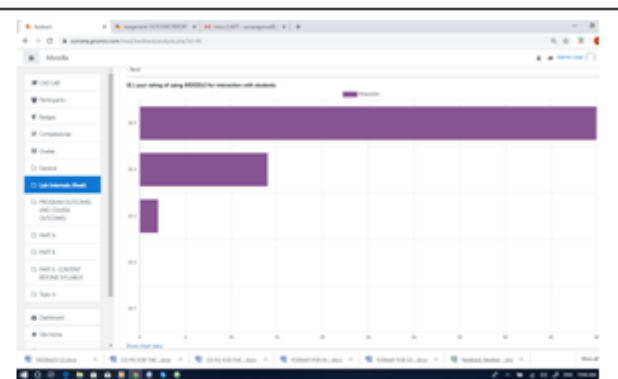
Lab Internals for Course CV-506, 5<sup>th</sup> semester Civil engineering: Number of students : 84

Activities conducted on the moodle: Innovative practices	Eliminating/ Overcoming of present difficulties faced
1. Creation of groups for the conducting the lab test.	Manual creation of groups and typing work etc eliminated.
2. In the announcement post, the Test dates and time is announced.	Various tools like social media for pre-course tasks intimation, announcements, notice board for intimation of test dates and time eliminated
3. Questions for the test uploaded	Question paper printing eliminated.
4. Submissions in PDF format uploaded by the student.	Answer paper printing and storing eliminated. Some answer papers printed for documentation. Rest documented and stored in soft form for three years as per norms. About 180 sheet printing of question paper and answer paper eliminated.
5. Grading by faculty. Marks and comments given	Pen and paper eliminated.
6. Notification of the marks and comments to students on moodle	notice board for announcement of marks, meetings, phone calls and waiting for the teacher for answering queries eliminated.
7. Students post their questions or queries about the test and the grading in the discussion forum	waiting / searching for the teacher for answering queries eliminated.
8. All the above documents pertaining to the course in one place.	Use of various tools for documentation and interaction eliminated.
9. Student progress in terms of completion of activities and grades obtained monitored.	Difficulty of monitoring student progress is Overcome.
10. Grades and analysis obtained	Entering the grades and carrying out analysis as a separate exercise eliminated.

All the above activities traditional carried out in various forms and mediums are integrated on the moodle learning management system. Requirement of NBA to use ICT as an effective tool for teaching learning process is fulfilled. Thereby compliance to the norms of NBA is achieved.



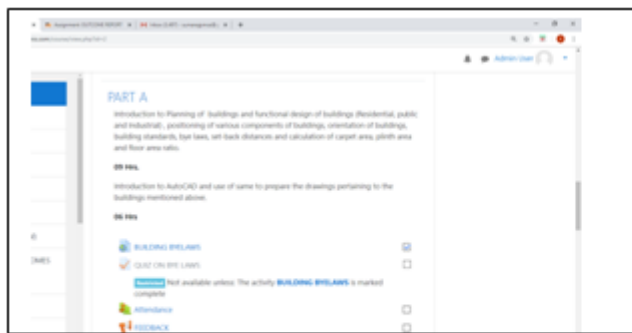
The answer paper uploaded for grading. Graded, comment given and notified to students on moodle.



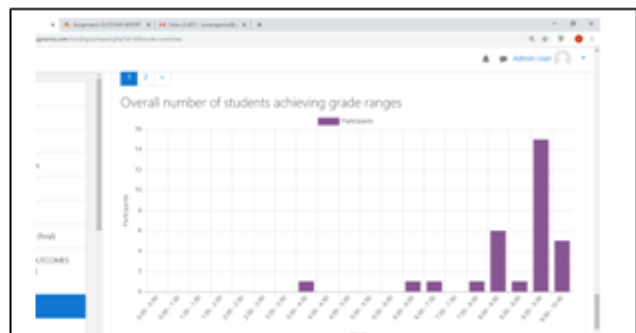
Feedback given by students to the question "Your rating of moodle for interaction with students."

(a) For conducting Quiz:

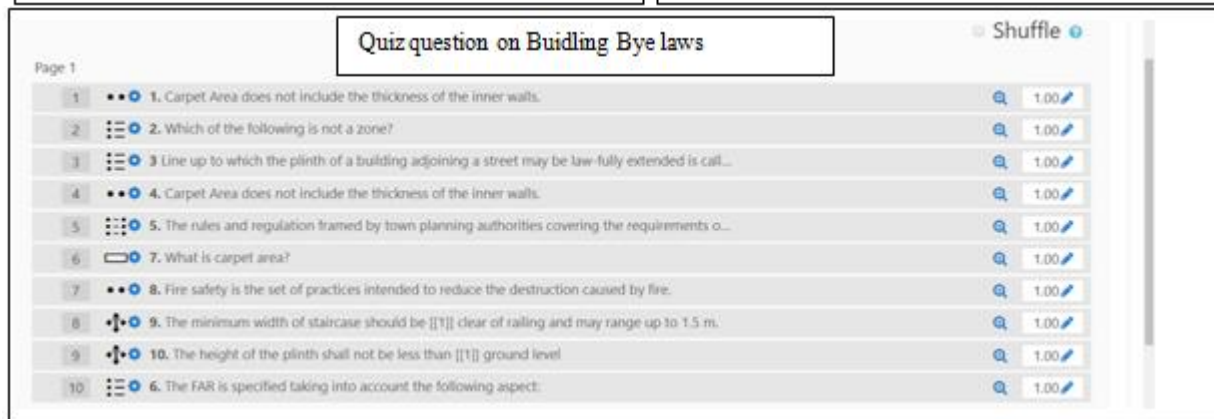
	Activities/ process on the moodle: Innovative practices	Eliminating/ Overcoming of present difficulties faced
1.	Creation of quiz with feedback on correct answers. Moodle feature used here is restrict access to quiz until the student has marked the PPT viewing exercise on the topic as complete.	Difficulty in availability of feedback on correct answer to student eliminated.
2.	Quiz has been designed using various options offered by moodle like match the pairs, multiple choice questions, true or false, short answer etc.	Teacher's difficulty of trying to create interesting pattern of quiz eliminated.
3.	Timeline to complete the activity announced in the forum.	Fixed time schedule for learning is eliminated.
4.	Defined quantity of learning and assessment method, with clear understanding of the procedure and rules uploaded.	Intimation, announcements, notice board for intimation of test dates and time eliminated
5.	Teacher is not physically present while the learning and attempting quiz activity is going on. Encourages self paced learning. The learning matter can be viewed as many number of times. Time of learning decided by the student (student centric approach)	The schedule for learning as directed by the class timetable is eliminated. Difficulty of conduction of quiz during class hours due to insufficient time to complete syllabus eliminated.
6.	Grading done by moodle	Pen and paper eliminated. Faculty work eliminated.
7.	Notification of the marks and comments to students on moodle.	notice board for announcement of marks, meetings, phone calls and waiting for the teacher for answering queries eliminated.
8.	Student grades and analysis done by moodle	Difficulty of monitoring student progress is Overcome.



Part A of the syllabus and activities uploaded on the moodle. 1. PPT on building byelaws. 2. Quiz on building byelaws. 3. Feedback.



Analysis of the quiz results graded by moodle. Can be exported to ms-excel.



Quiz question on Building Bye laws

**2. Implementation at the program level:**

Adopting an Integrated approach in achieving the goals of the various roles and responsibilities.

	The moodle approach	Traditional approach
1.	Role of Course faculty and Department Magazine co-ordinator integrated.	Separate functioning of the various roles as faculty and department magazine co-ordinator.
2.	Student assignments are designed and adopted as articles for the Department Magazine	Assignments stored in the cupboard for three years as per norms.
3.	Student types out his work and uploads it in the given format.(conducive for Dept magazine designed by course faculty)	There is no co-relation of the assignment and the Department magazine.
4.	Student is encouraged to do better, as he is aware that the outcome of his work	Student is reluctant to do good work as it is an audit

	has been well designed by he faculty.	course.
5.	Student portfolio is strengthened by such exercise.	May not be considered to be part of the portfolio.
6.	Assignments are in the soft form	No carrying them for grading etc
7.	Students submits his work as per the format provided appropriate for Dept Magazine	Lot of Processing and formatting work for Dept Magazine



The cover page and two pages of the Department Magazine, created out of students assignments . . . . .

**EVS continuous Internal Evaluation for 5<sup>th</sup> semester civil engineering 19<sup>th</sup> Nov 2019 HS-006**

**Objective**

- To introduce the student to write out his/ her own idea
- To initiate the student into seminar paper writing without him being conscious of the process.
- Learning outcome: At the end of the exercise the student should be able to voice out his/ her idea.

Answer all the following questions:

No prerequisites required. No reference required. Just write about any issue that you are experiencing in your everyday day, and write the answers as if you were sharing your ideas with a friend.

- 1) What do you want to say? Write the problem statement.
- 2) Why you came up with the problem statement.
- 3) Line of reasoning (why it is happening) arguments (positive and negative) as you would explain to a friend.

- 4) Conclusion: Possible solutions, how your solutions will be useful to the society. Which part of your solution can be worked upon by checking references for facts finding, carry out experimental work and conclude with findings for further improvement.

**3. Implementation at the Institute level**

The faculty role to the assisting of administrative responsibilities and co-operation with other Faculty, Heads-of-Departments and the Head of Institute is crucial for an effective faculty performance appraisal system. The contribution of individual Faculty to institutional performance and the implementation and effectiveness of the contribution plays an important role in the faculty appraisal.

Having attended the two weeks FDP in DYP College of engineering, Pune on OBE, the proposal to ‘Sharing the learning ...the Moodle Experience’ was put forward to the Head of the Institute and The Dean Administration. After receiving the approval, and working out the logistics, the design of the course was done as follows.



Exploring the possibility of Implementation of moodle at the Institute level with The Head of the Institution Dr.K. S. Jayantha.

Working out the logistics of the program and fixing of the Date, time and Venue with The Dean Administration Dr. M. K. Ravishankar.

**Conduction of of Hands on session on “Sharing the Learning..... The Moodle experience.**

Number of participants in two groups : about 40 members in each group (Total 87 faculty members).  
 Duration of session : Three hours for Each group Date and time: 5<sup>th</sup> and 6<sup>th</sup> of Dec 2019, 10am-1pm.  
 Venue: CAED centre, Dept of Mechanical Engg, Malnad College of Engineering, Hassan.



Checking the compatibility of the Lab for the program

Winner of the pre program quiz, Raghavendra Deshpande, Dept of EEE

**Malnad College of Engineering, Hassan, Karnataka  
 Sharing The Learning ..... The Moodle Experience**

Number of participants on day 1 (5<sup>th</sup> DEC 2019) 10 AM-1PM : 43  
 Number of participants on day 2 (6<sup>th</sup> DEC 2019) 10 AM-1PM : 44  
 Resource Person: Sumana Jayaprakash, Dept of Civil Engg, Malnad College of Engg, Hassan

**Pre Program Tasks:**

	TASK
1.	Participate in the six quiz sessions on OBE (each of 5 questions) posted in the group.
2.	Watch THE PPT ‘why MOODLE is required’ and post your expected learning outcome

**Course Outcomes:**

CO	CO STATEMENTS	PO
CO1:	Apply the concepts of engineering for teaching – learning through effective use of modern tool.	PO5, PO8
CO2:	Create effective presentations for engineering activities. Design effective assignments and exercises for communication with the student community.	PO1, PO10
CO3:	Construct the design of the course handled in moodle complete with required data, activities like quiz, games, uploading file (syllabus, vision, mission, PEO, PSO,POs,COs), url, and video files. Explore more by resources available.	PO5, PO8, PO12

**Post Program Tasks: (Total 100 marks)**

	TASK CO	CO	PO	BT LVL	MARKS
1.	Enroll for the self paced online course moodallians.gnomio.com for understanding	CO3	PO12	2	10
2.	Create your own site in gnomio.com	CO1,CO3	PO5	3	20
3.	Add course and Enroll students in your site	CO2	PO10	1	10
4.	Design a quiz with at least 5 questions	CO1,CO3	PO1	6	10
5.	The students should have attempted the quiz	CO2	PO5	2	10
6.	Introduce a glossary and a game	CO2,CO3	PO5	2	10
7.	Design a feedback questionnaire aligning with the co	CO1	PO8	6	10
8.	Upload a video file by recording on screen castomatic	CO3	PO10	2	10
9.	upload files (syllabus, po,co, rules to be followed)	CO3	PO8	2	10
	TOTAL				100

**CO-PO Attainment**

Target level: 60%

Direct attainment	post program tasks	80%
Indirect attainment	Participant feedback	20%

**Sharing the Learning . . . . . The Moodle Experience**

Venue: CAED centre, Dept of Mechanical Engg, Malnad College of Engineering, Hassan.

**Schedule:**

1. 10am-10.150 am: Game Pedagogy:



2. 10.15am-10.40 am: Session on Implementation of moodle



3. 10.40am-11.10 am: Hands on exercises as participant in newly created website Training. Gnomio.com



4. 11.10am-11.25 noon : Group photographs.

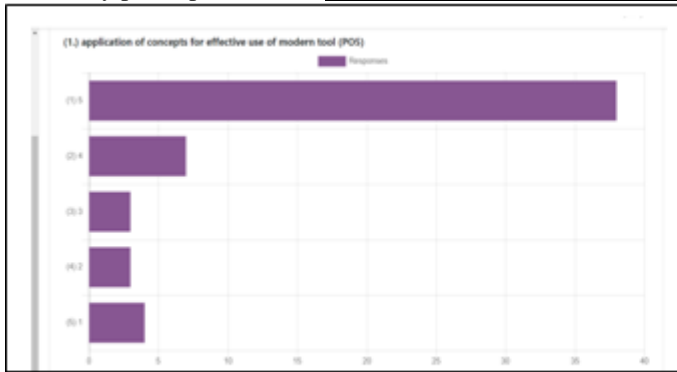


5. 11.25noonam-12.45pm : Session on Creating Your own website on Gnomio.com

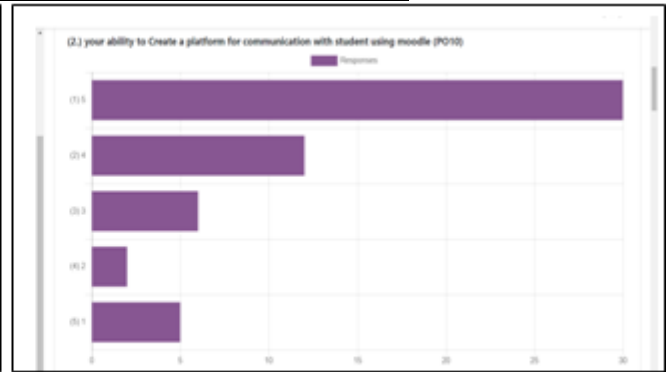
6. 12.45pm-1pm Feedback session.



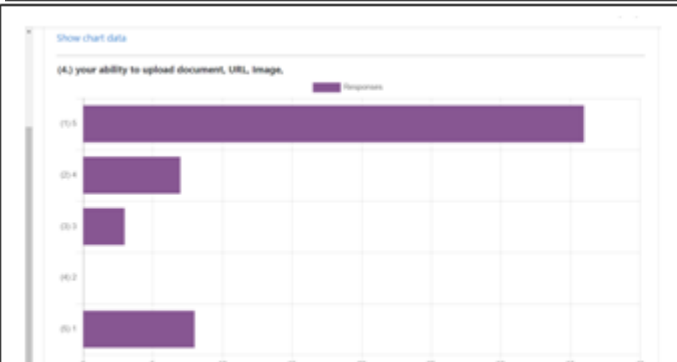
Feedback by participants on the **SHARING THE LEARNING . . . . . The Moodle Experience**



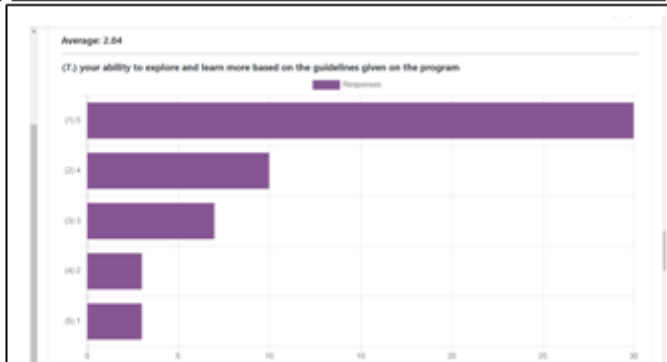
Question: Application of concepts for effective use of modern tool (PO5)



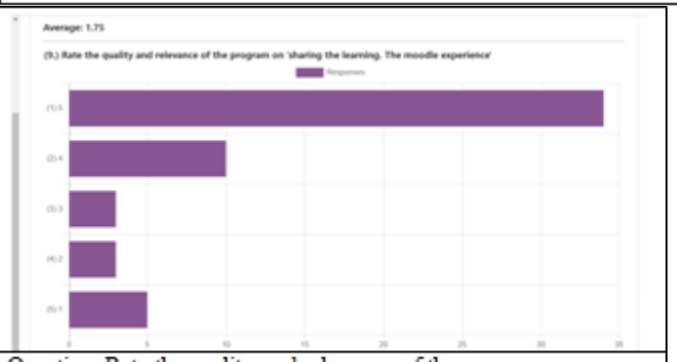
Question: Your ability to create a platform for communication with students using moodle (PO10)



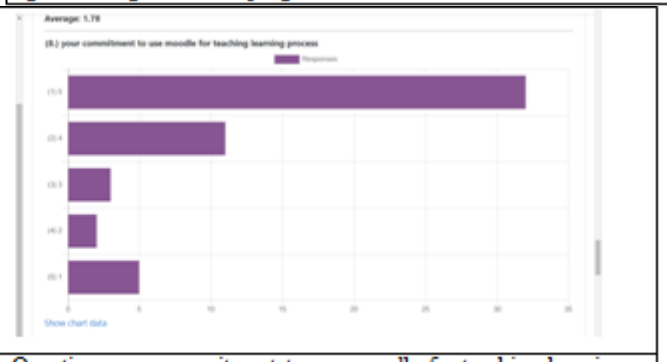
Question: Your ability to upload documents, URL, Image on your moodle site



Question: Your ability to explore and learn moodle based on the guidelines given in the program



Question: Rate the quality and relevance of the program on 'sharing the learning. The moodle experience'



Question: your commitment to use moodle for teaching learning process

**Limitations of the program conducted:**

- 1) The resource person Sumana Jayaprakash, herself has not completely learnt and explored the moodle platform, hence this factor is a limitation.
- 2) Only one person to share the learning with about 40 faculty per session, on two days.
- 3) On day 1, after opening own site in gnomio.com, only adding new course and one quiz question activity was possible due to time constraint. Hence on day 2, the video 'What is a machine?' was not included as an activity, and

- 4) In Question 'Your ability to open your MOODLE website', the rating went like 1/5, 2/5, 3/5, 4/5, and 5/5. It was misleading and not understandable, but brought to notice by participants only at the end of the session on Day 2, hence could not be corrected, may be an incorrect feedback.

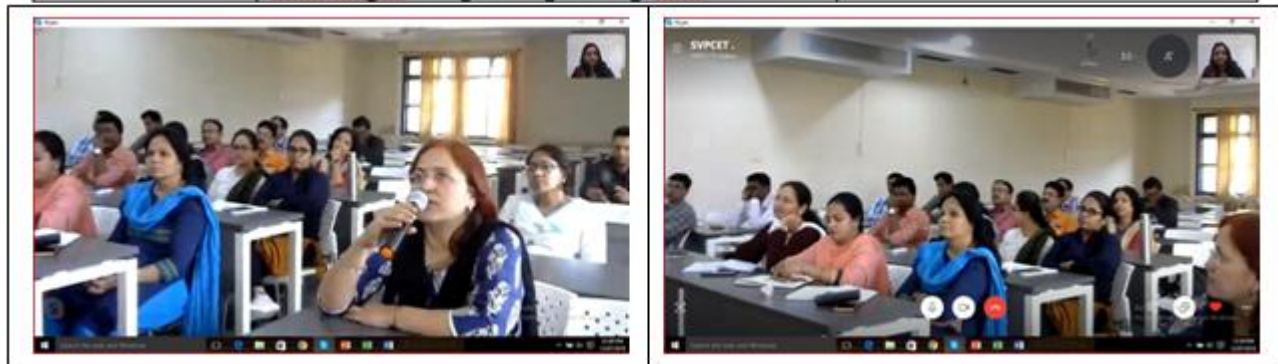
**4. Implementation at the Inter- Institute level**



## St. Vincent Pallotti College of Engineering & Technology, Nagpur Schedule of Skype Interaction

- Date: 7<sup>th</sup> Nov. 2019, Venue : Remote Centre, F12
- Time: 10.30 am – 1.20 pm
- Skype id :- svpcet@outlook.com

Time Slot	Name of Resource Persons	Topic
10.30 – 10.55am	Prof. Nilesh Sabnis, Sanjay Ghodawat University, Kolhapur	Advanced features of Moodle.
11.00 – 11.25 am	Prof. Ajita Deshmukh, School of Education & Research, MIT University, Pune	Leveraging Web 2.0 tools for learning.
11.30 – 11.55am	Prof. Nilesha Patil, SMT Kashibai Nawale College of Engineering, vadgaon, Pune	Measures to Enhance employability.
12.00 – 12.25 pm	Prof. Sumana Jaiprakash, Malnad college of Engineering, Hassan, Karnataka	Exploring Moodle for teaching learning Innovation.
12.30 – 1.00 pm	Prof. Sonal Patil, GH Raison Institute of engineering & Management, Jalgaon	Student's feedback- When we want? When student's want? Best practice, Impact Analysis & Improvement strategies.
1.00 – 1.20 pm	Dr. Meghana Chattarjee , Datta Meghe college of Engineering, Navi Mumbai	Rubrics



Participated in the skype Interaction with faculty members of St. Vincent Pallotti College of Engineering and Technology on “Exploring moodle for Teaching Learning Innovation” ([http://youtu.be/F\\_tEOJ5vags](http://youtu.be/F_tEOJ5vags))

### 3. Conclusion

Exploring moodle for teaching learning process is a dynamic learning environment which opens up unlimited possibilities to innovate. It is indeed Education4.0 in practice and aligns the role of the teacher as a learner and facilitator, keeping abreast with the current and futuristic pedagogical strategies, learning the innovative tools and facilitating and redefining the classroom environment for effective Teaching Learning process. The wide horizon opens up opportunities for the course faculties who are at the same time co-ordinating various activities at Program level and Institute level, carrying out administration and other roles to take up various areas of innovation and documentation for creating and disseminating the methodology of innovation.

### References

- [1] <http://dypcoeakurdi.gnomio.com/>
- [2] Manual of AICTE sponsored Two weeks Pedagogical FDP. DYP College of Engineering, Pune.
- [3] Dr. Amarendra Pani. Academic Leadership: Concept, Attributes and Practices: UNIVERSITY NEWS, 55 (49) DECEMBER 04-10, 2017