Effective Integration of E-Learning and Social Platform: An Overview of the Practice at ACE

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Abstract— This paper discusses one of the best practices for e-learning in Atharva College of Engineering (ACE). Comparing Traditional Classroom Learning and E-Learning, it emphasizes the importance of active learning of students for better outputs. The main focus of this paper is how Course Networking was introduced in the system and step by step implementation of the same through training of teachers and students. The paper outlines the strategy and the framework designed by the Department of Computer Engineering and how it made the difference. The paper highlights the positives as well as area of improvement of the Course Networking.

Keywords: e-learning, course networking, education practices

1. Introduction

Different teaching strategies have been followed for knowledge transfer. Teaching strategies have shifted from Content Delivery to Learner Centric methodology. In content delivery approach the primary role of student is to passively receive information (via lectures and direct instruction) with an conclusive goal of testing and assessment while in learner centric methodology, focus has been shifted to students/learners. Learner centric methodology involves active learning where students actively answer questions, solve problems, construct their own problem set, perform discussion, and explain, debate, works on Group-Projects and brainstorm during class. Active learning cannot be achieved by using traditional teaching methodologies. It is easy to incorporate active learning in our current teaching methodology by using E-learning Management system. E-learning Management system is a software tool for the administration, documentation, tracking, reporting and delivery of eLearning education courses. [6]. In order to thrive in the 21st century, students' needs to have active learning inside and outside the classroom. They must be adroit at collaboration, communication and problem-solving. Course networking is an LMS which not only provides help in building above given skill but also helps the learners around the world to collaborate and make learning process simple, easy and interesting.

Course Networking (CN) is a unique, next generation technology solution for the education industry developed by many years of thinking and research. CN offers a comprehensive Learning Management System (LMS), as well as online learning and social collaboration functionalities to globalize teaching and learning process. The CN ensures that teaching and learning process should perpetuate 24*7 globally through the website or the mobile application. It connects geographically distributed teachers and learners either in urban or rural areas via website or smart phone application. The CN also provides a turnkey solution for implementation in institutions.

CN provides user friendly interfaces for creating course and inviting students to join the course. Now a days documentation plays a vital role in teaching learning process which includes recording test result, analyzing the result and finding out the area of improvement. This entire task has been made easy by CN.

A. Traditional Learning

Traditional learning is a commonly accepted mode of formal education across the world. Here teacher controls the learning environment. In traditional learning students are regarded as a knowledge hole where information should be filled as per the syllabus. This method does not consider the changing requirement of students. Because of same reasons institutes have started some extra college courses and workshops as per the requirement of student. Competition and knowledge level has increased the demand of change in learning process.[1]

B. E-Learning

E-learning is a computer based educational tool or system that enables to learn anywhere and at any time. E-learning offers the ability to share material in all kinds of formats such as videos, slideshows, word documents and PDFs. Conducting webinars (live online classes) and communicating with professors via chat and message forums is also an option available to the users. [2]

E learning engages students in a more interactive way, along with locational restrictions, time is one of the issues that learners and teachers both have to face in learning. In the case of face-to-face learning, the location limits attendance to a group of learners who have the ability to participate in the area, and in the case of time, it limits the crowd to those who can attend at a specific time. E-learning, on the other hand, facilitates learning without having to organize when and where everyone who is interested in a course can be present. Even given all the benefits of e-

learning, one cannot deny there are some drawbacks. Practical skills are somewhat harder to pick up from online resources. For example, although building a wooden table is something you can easily share information about, record videos of and explain, the practical experience is essential [3]. Pottery and car engineering are examples of skills that require hands-on experience. E-Learning, in comparison with traditional learning, significantly reduces the time needed to locate information. It also offers access to online resources, databases, periodicals, journals and other material you wouldn't normally have access to from a library. If a student has trouble understanding part of the coursework, finding tips on the matter couldn't be easier than having immediate access to supplementary, unlimited and mostly free material online.

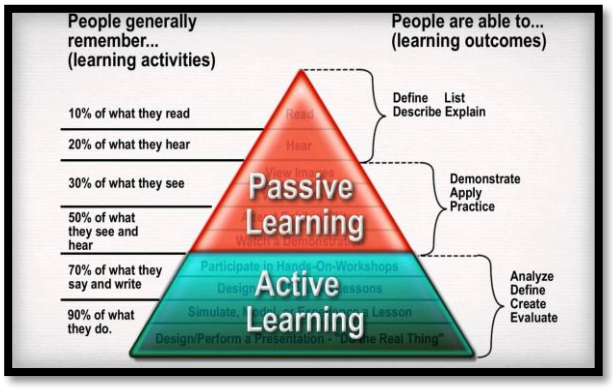


Fig. 1. Active Learning vs Passive Learning

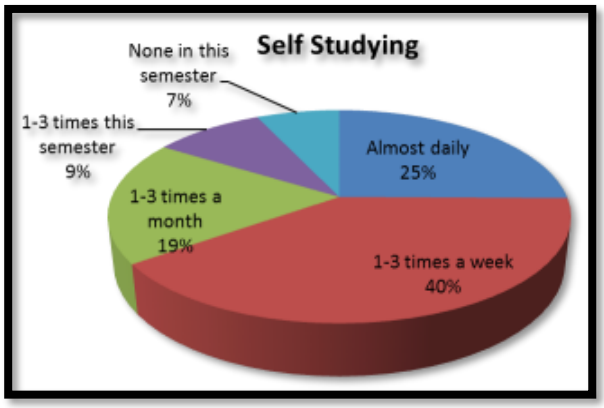


Fig. 2. Comparative Study of Traditional Learning & E-learning

Table 1. Traditional Vs E Learning

Traditional E Learning Approach			
Sr. No.	**Medium**	**Traditional Classroom**	**E-learning**
1.	Learner Engagement	Classroom	Classroom plus on-demand learning via web or mobile: anytime, anywhere, and on any device.
2.	Classes	Physical, Limited size, synchronous	Virtual, local and global, 24*7 support
3.	Content	Power point/ transparency/ chalk board	Multimedia, simulation, webinar Digital library Syn. & Asyn.
			communication
4.	Personalization	one learning path	Learning path and pace determined by learner
5.	Reporting and Analytics	Tracked by instructor, Test Scores	Centralized Learning Record, Completion Tracking, Test Scores, Question Analytics, Informal Learning Activities, Social Learning Activities

C. Characteristics of CN

Following features of CN facilitated us to put into practice in Atharva College of Engineering

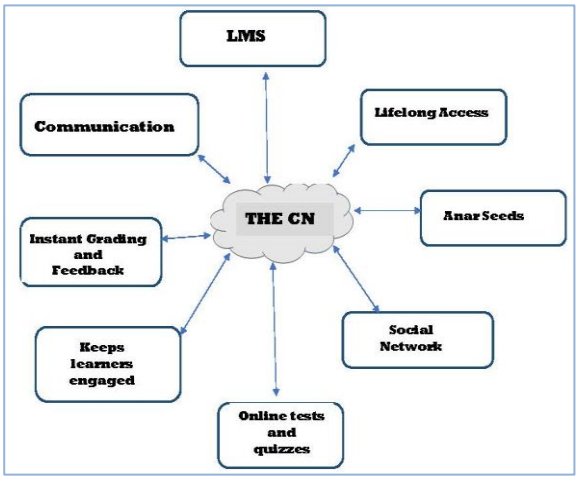


Fig. 3. Characteristics of CN

1) *LMS:* LMS stands for Learning Management System and it's a global term for a computer system specifically developed for managing online courses, helps in collaboration and communication between students and teachers and distribution of course material. [7][8]

2) *Grading and Analysis:* Grading and its analysis is probably the most time-consuming task for an instructor. Tests needs to be organized, gathered, graded, analyzed and feedback has to be given to individual learner for improvising on particular areas.CN makes this task easy with the help of quizzes and poll. Instructors can create web-based quizzes in their courses in order to test learner's knowledge while poll can be used for feedback survey, informal quiz or as an in-class activity.

3) *Keeps Learners Engaged:* It keeps learner engaged with help of post, poll, Tests and quizzes etc.

4) *Social Network:* CN social network page offers social networking among learners, instructors, alumni and users from across the world in the form of course

5) *Anar Seedss:* The CN enables a learning and collaborative experience that is rewarding, engaging and fun. Users get Pomegranate (Anar) Seedss for various learning and collaborative activities or overall participation on the CN platform. These Anar Seedss has gamified the teaching learning activity

6) *Lifelong Access:* CN offers lifelong Cyber identity and access to all learning content even if users move to other institutions.

CN powers up your institution with following services for betterment of teaching- learning system.

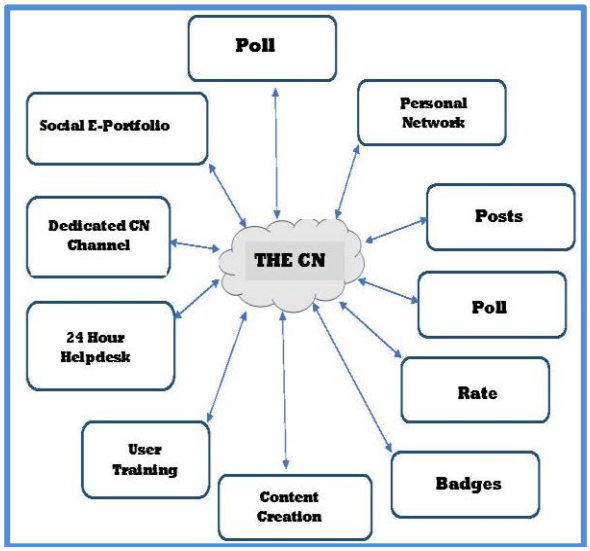


Fig.4 . Services Provided by CN

1) *24 Hour Helpdesk:* The CN offers 24/7 helpdesk support. Specific helpdesk services such as a dedicated support team can be offered to meet client requirements.

2) *User Training:* The CN provides Super User, End User and Instructional Design trainings to help our users fully utilize the CN's tools and features to meet institution and user needs.

3) *Content Creation:* The CN offers specialized e-content creation services to ensure that valuable content is created to complement the usage of our platform.

4) *Social E-Portfolio:* Users can customize a Life Long Profile that can be used to showcase academic, professional and personal.

5) *Dedicated CN Channel:* A dedicated CN Channel offers institutions full administrative control, automated accounts and course creation and access to institution-wide analytics and reports.

Other available features are:

a) *Personal Network:* Users can create Personal Networks for their colleagues, peers, instructors, mentees, etc. These Personal Networks can be used for visibility settings, email recipients, and post filters'

b) *Posts:* The Post tool can be used as the main communication tool on CN Post where student and faculty members can have constructive discussion, ask questions, share external resources both in and outside of the classroom.

- Discussion thread can be created using the Post tool.
- Multimedia such as files, pictures, web links, YouTube Videos and SCORM files can be displayed.
- There is a file upload and download size of 200 MB on CN.

c) *Poll:* The Poll toll can be used for feedback survey, informal quiz or as an in-class activity.

- Poll response can be visible to all students or just visible to instructors only depending on the Poll setting.
- Poll data can be extracted to Excel for further data analysis or records keeping by the Poll creator [7]

d) *Rate:* In order to like a post or poll "Post Rating" option is available. This peer review feature helps in rating the quality and helpfulness of posts. You may anonymously rate a post with 1 star for "OK", 2 stars for "GOOD", or 3 stars for "GREAT". Once a post is rated, the average rating of the post will be calculated. In the near future, this average rating will be used by a smart learning agent to recommend high quality global posts to CN users.

2. Implementation

A. Initial Steps for Course Networking:

Course Networking(CN) has been started in Atharva college of engineering in June 2016. If a new procedure needs to be implemented in a college then for the same faculty and students needs to be trained. All the faculties of different departments have been trained rigorously. This training has included the e-learning characteristics, how it can be implemented in current scenario with CN, purpose and outcome of bringing CN into practice. Following training programs and FDP programs has been organized in Atharva for faculties and students by Mr. Mahendra Patil and his team:

Table 2. Initial Training Schedule

DATE	TRAINING
5th December 2016, 14th December 2016	Faculty
3rd, 4th , 6th January 2017	Faculty
19th January 2017	Students
20th January 2017	Students

Image 1. Training of Faculties

1) *Feedback of Training:* After the completion of Training, an online feedback was taken from the student and faculties. The feedback form covered various aspects right from the productivity of the training and how much it helped the students and faculties in assessing themselves in terms of their technical capability

The feedback of training presents the following statistics of the training

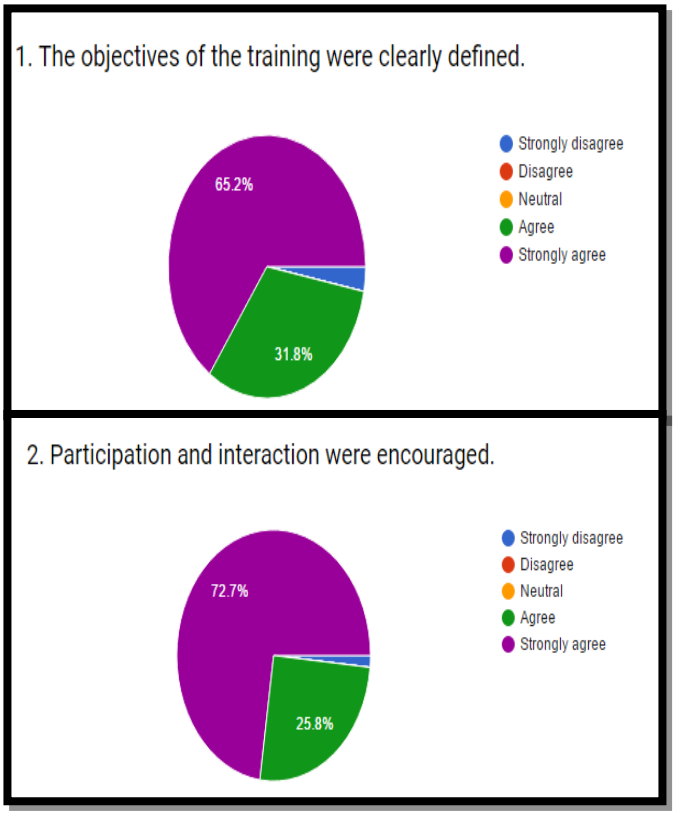


Fig. 5(a). Feedback of CN Training

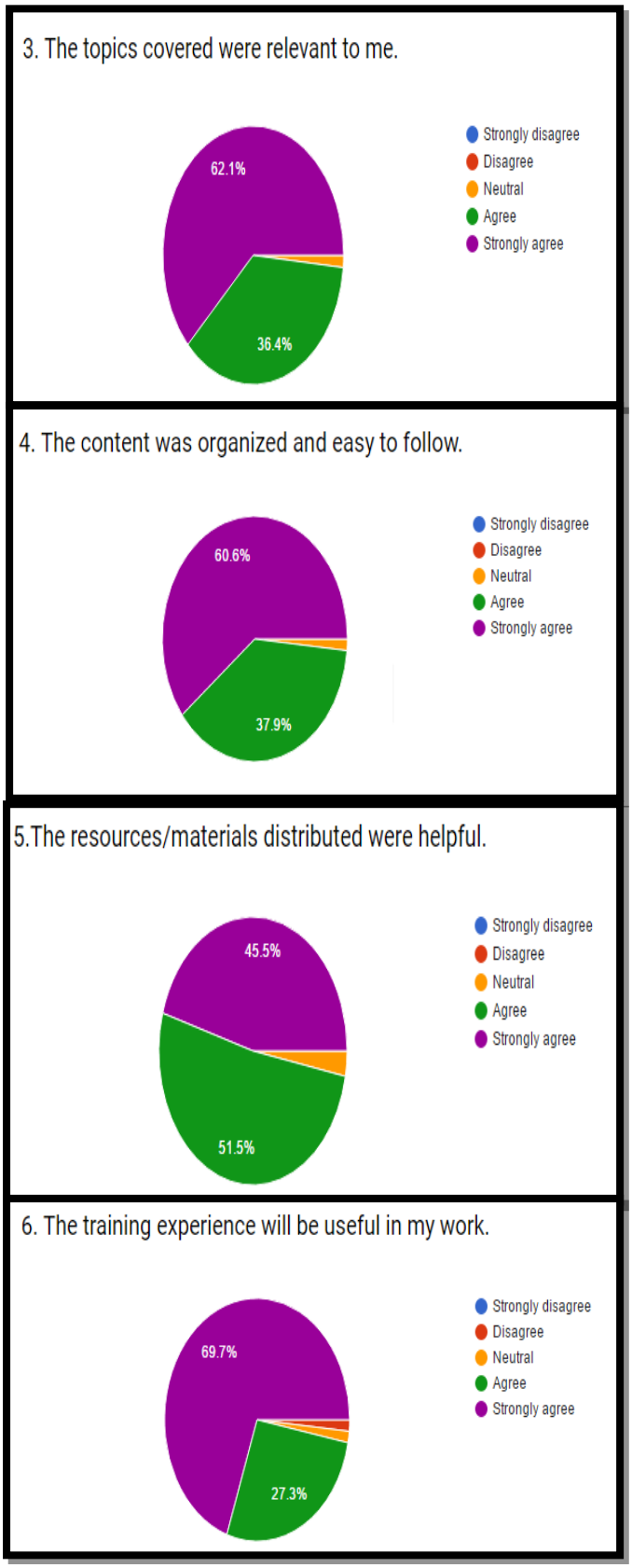


Fig. 5(b). Feedback of CN Training

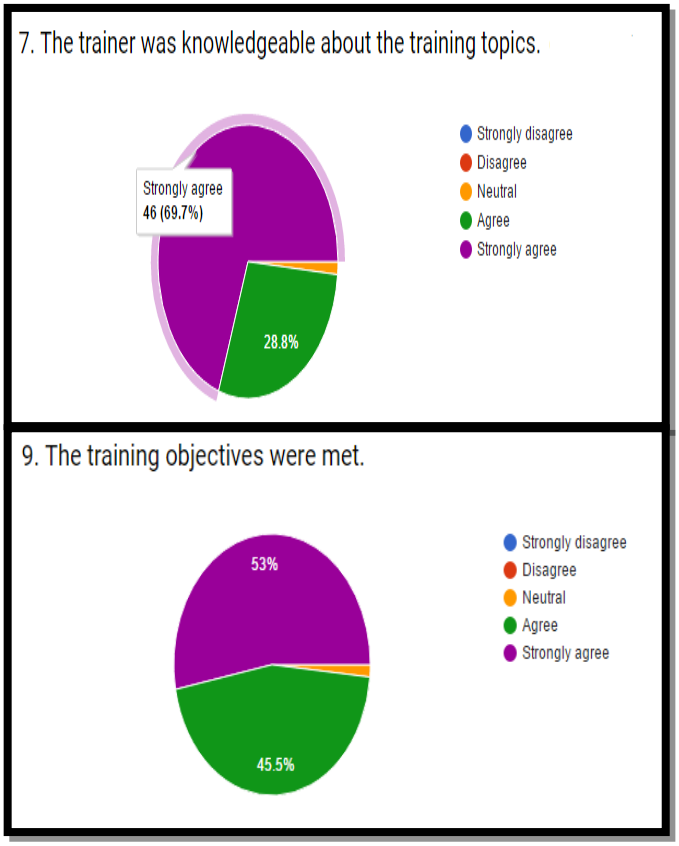


Fig. 5(c). Feedback of CN Training

B) Implementation Strategy

We have considered only parents, faculty and students as a stakeholders of learning process. Communication takes place between all these stakeholders. We have created courses for communication between any two stakeholders.

1) *Courses for Student Faculty Communication:* These courses will be created by subject in-charge corresponding to every subject. Specific course code has been created so that data of a student or subject of a specific year can be retrieved easily. Some of the codes used by subject in-charges are given below:

Table 3. Codes Assigned for CN Courses

Subject	Class 1		Class 2	
SE				
AOA	**Sinu M***	SECMPN1_AOA_2016-17	Neha G	SECMPN2_AOA_2016-17
COA	EXTC	SECMPN1_COA_2016-17	EXTC	SECMPN2_COA_2016-17
DBMS	Mahendra P.	SECMPN1_DBMS_2016-17	Chandana N	SECMPN2_DBMS_2016-17
TCS	Amruta M	SECMPN1_TCS_2016-17	Nida P	SECMPN2_TCS_2016-17
CG	Archita D	SECMPN1_CG_2016-17	**Apeksha W***	SECMPN2_CG_2016-17
AM IV	HAS	SECMPN1_AMIV_2016-17	HAS	SECMPN2_AMIV_2016-17
TE				
SPCC	Divya K	TECMPN1_SPCC_2016-17	**Ajeet G.***	TECMPN2_SPCC_2016-17
SE	Shweta S.	TECMPN1_SE_2016-17	Bhavna A.	TECMPN2_SE_2016-17
DD	Satish R.	TECMPN1_DD_2016-17	NSI	TECMPN2_DD_2016-17
MCC	Neha S.	TECMPN1_MCC_2016-17	Minakshi C.	TECMPN2_MCC_2016-17
PM	**Santosh D.***	TECMPN1_PM_2016-17	Santosh D	TECMPN2_PM_2016-17
NPL	Amruta M	TECMPN1_NPL_2016-17	Nida P	TECMPN2_NPL_2016-17
BE				
DWM	Aruna P	BECMPN1_DWM_2016-17	**Aruna P***	BECMPN2_DWM_2016-17
HMI	Suvarna P	BECMPN1_HMI_2016-17	Amruta S	BECMPN2_HMI_2016-17
PDC	Trupti S.	BECMPN1_PDC_2016-17	Trupti S.	BECMPN2_PDC_2016-17
DF	**Krishnanjali S***	BECMPN1_DF_2016-17	Deepali M	BECMPN2_DF_2016-17
CC LAB	Rajesh G	BECMPN1_CCL_2016-17	Neha G	BECMPN2_CCL_2016-17

This course has all Course documents like the lesson plan, syllabus, reference book, previous year question paper, quiz, notices.

Faculties were responsible for:

- Creating quizzes corresponding to all the course outcome. It will be helpful in identifying area of improvement of students.
- Creating task for student to submit assignment, answer to a poll/post.
- Grading the assignment and releasing the grades.
- Uploading the notes, syllabus must be available for students to view, particularly at the beginning of the term. This will ensure that the student knows which lessons will be covered throughout the course, and can use the syllabus as a guide throughout the entire course.
- Managing the different documents related to the subject.

2) *Courses for Student Faculty Communication for Mentoring:* Mentoring group has been created for mentoring student. It will be created by mentors. Mentors can upload motivational thoughts on CN for students. Student can post their problems in the group or chat with the mentor.

3) *Courses for Parent Faculty Communication:* In today's fast pace lifestyle time plays a crucial role. Parents want to remain informed about their ward's performance, behavior and presence in the classroom but due to remoteness and time constraint they are not able to visit college on regular basis. Because of same reason separate parent teacher communication course has been created by all the mentors on CN. From this course they convey student's performance, achievement, attendance and any other related issue time to time.

4) *Courses for Communication Among Faculties:* This course has been created for the communication among faculties. This course will act as:

- Repository for Faculties' and Students' Achievement.
- Repository for departmental notices, upcoming conferences details.
- Faculties can upload attendance, term test marks, mentoring details, Experiment list as a task.
- Formats designed by CN team members of college for Mentoring Course Name and Subject Course Name.

By using Course networking, students are expected to get benefitted as follows:

- Improvement of technology skills
- Increase in the exposure of diverse views
- Develop a positive image
- Increase the engagement of learning

After completing the basic training program, the next important task was to ensure the effective implementation of the Academic Courses on Course Networking. Two teams were formed to look after the implementation of the Courses on theCN, one for faculties and the other for students.

These two teams designed the Help Manuals for both the faculties and the students with different approaches. The aim was to design a step by step Help Manual in simplest

language so that any nontechnical person can read it and can access the Course Networking (theCN) efficiently.
Following points were essential part of the training as well as the Help Manual for Faculties as well as Students:

1. Create Account
2. Create Course
3. Create a Task for the Course
4. Syllabus for the Course
5. Create a Post for the Course
6. Create a Poll for the Course
7. Create an Event for the Course
8. Send Mail to Members in Your Course
9. Invite Members in the Course
10. Create Quiz for Your Course
11. Join a Course Created by Others
12. Roster

At Atharva College of Engineering, Course Networking is implemented through mainly 3 Course Groups:

1) *Subject Course Group:* For Subject Communication
2) *Mentor Course Group:* For mentoring an assigned group of students.
3) *Parent Course Group:* For Parent-Teacher Communication.

Other Course Groups which are currently in functioning are as follows:

1) *Departmental Faculty Course Group:* Department Communication, repository of notices and other department related work
2) *Departmental Students Course Group:* For only Student and HOD Communication
3) *Departmental Training & Placement Course Group:* For departmental T&P notices and activities
4) *Atharva College of Engineering (ACE) Training & Placement Course Group:* For College Level T&P notices and activities
5) *Atharva College of Engineering (ACE) Alumini Course Group:* For alumni communication and record
6) *Computer Engineering Parents Course Group:* For only HOD and Parent communication

3. Feedback

A feedback was taken from students and parents to make sure that whether we are on the right path or not and to analyze the area of improvement.

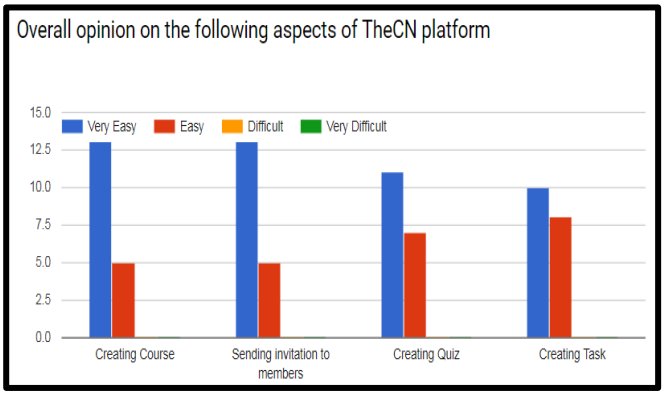
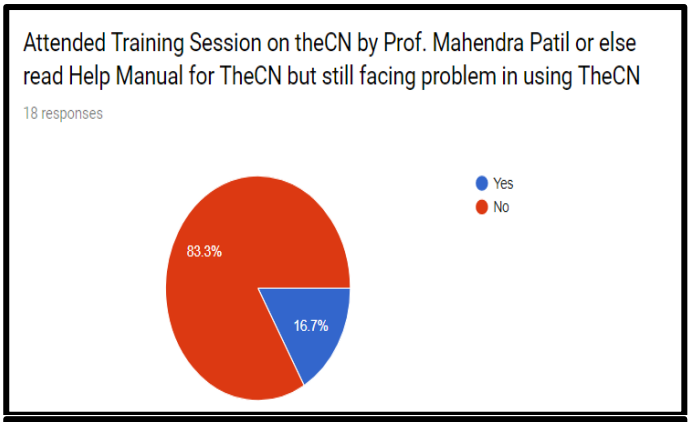


Fig. 6 (a). Faculty Feedback about CN



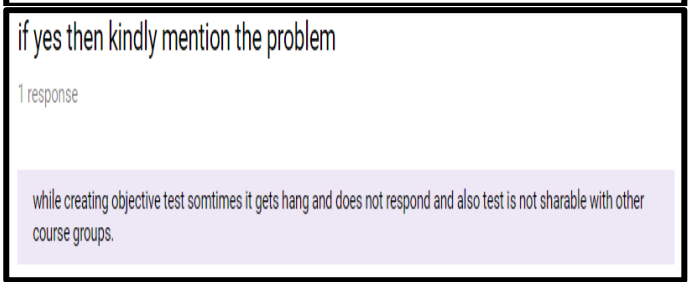
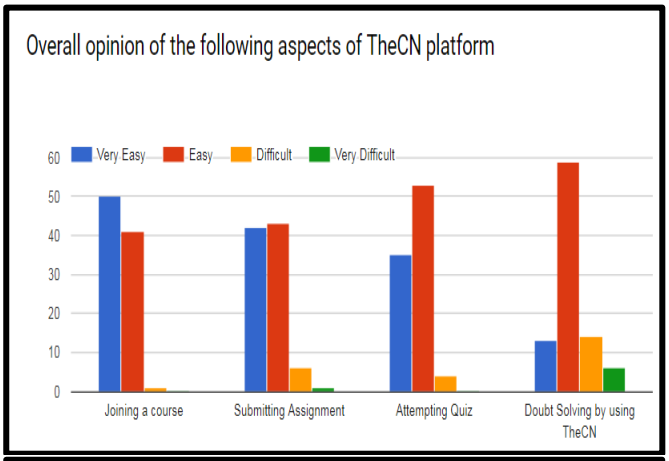
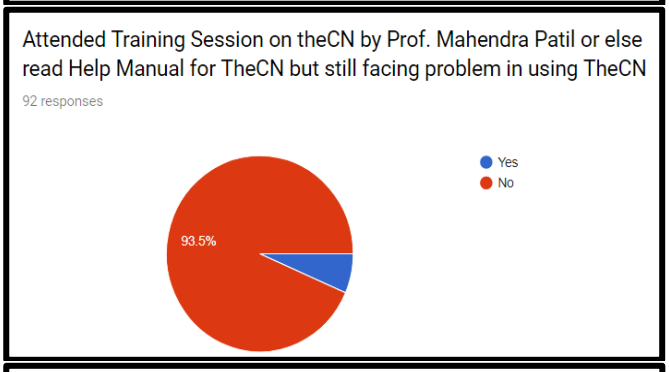


Fig. 6 (b). Faculty Feedback about CN





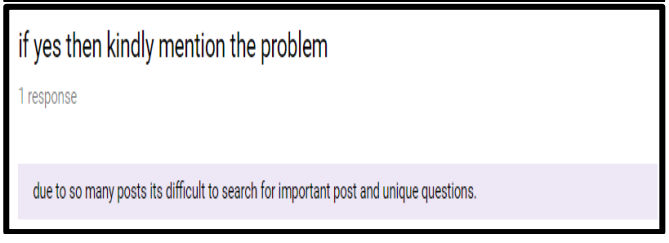


Fig. 6 (c). Student Feedback about CN

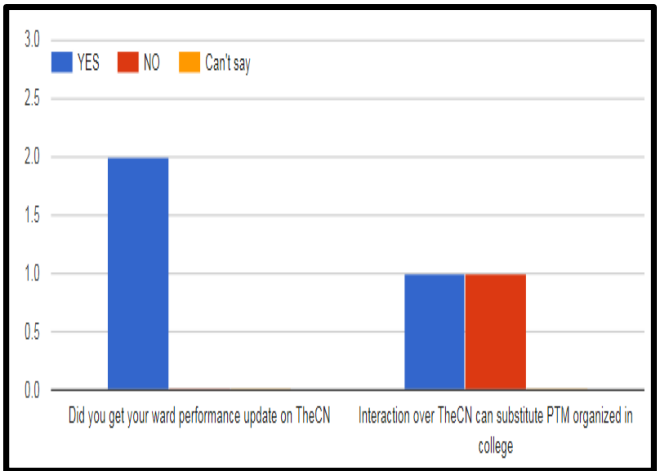


Fig. 6 (d). Parent Feedback about CN

Summary of the Remarks and Suggestions from the feedback:

Table 4. Remarks & Suggestions from the Feedback

Sr. No.	POSITIVE	Area of Improvement
1	Overall it was a very good and interactive training.	Requires more time for role play scenarios.
2	It has helped the student to understand the subject and responsibilities for the semester.	Some aspects related to CO mapping and analysis need to be improved.
3	Will help student to engage himself with the concerned faculty for particular subject	It would be better if the username can be edited by self.
4	Helped in creating own courses related to ones subject.	Communication with the student is to be increased.
5	Mentoring became very Easy.	Monthly updates on the training should be done.
6	User friendly platform and will reduce manual work.	Refresh the page again and again
7	Useful open source platform, Very useful as per Digital India plan.	Need more time to practice.
8	Learning and connecting with people in the digital world will make our minds more harper.	More discussion on topics can be done.
9	This platform as LMS and make learning easy and fun and available to students 24*7.	More technical points should be included.
10	It will help to share entire course related materials or notices, take test or any other information to be shared to the group of students easily.	While explaining students should use that platform.

4. Results

The implementation of the Course Networking has lead the Department of Computer Engineering towards some positive results and we are still in the process to find more ways to make best out of it. At the end of the Even Semester 2017 the enrollment and participation of the students can be summarized as follows:

Table 5. CN Enrollment for the Even Semester 2017

BRANCH	CLASS				
	FE	SE	TE	BE	TOTAL
CMPN	NA	160	163	163	486
IT		128	155	166	449
EXTC		104	164	163	431
ELEC		62	78	72	212
ETRX		66	74	74	214
HAS	358 (till date)	NA			358
	GRAND TOTAL				2150

- Teacher Student interaction increased and improved drastically.
- Different features of CN like post, poll and event were used to make them feel the social platform.
- Quizzes and Submission of Assignments were carried out online. Badges were awarded based on the active participation of student in particular course on Course Networking. It was like the gamification of education. [8]

Course Networking also played an important part in Training and Placement activities. Online Aptitude Tests and Quizzes helped students to practice these things 24x7 from anywhere.

The number of students placed in this Academic Year showed a significant improvement as compared to previous years.

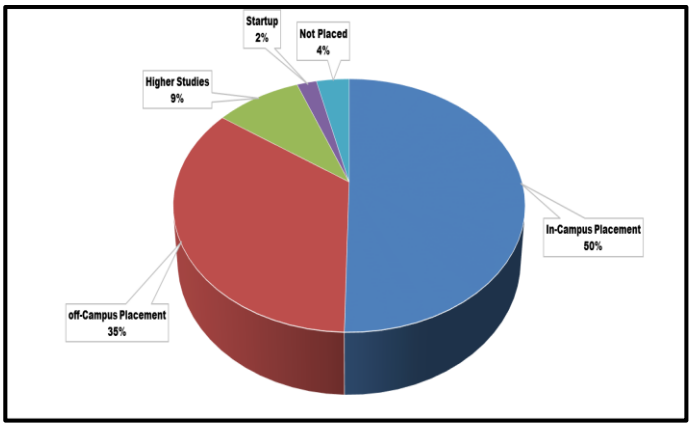


Fig. 7 Student Placement 2015

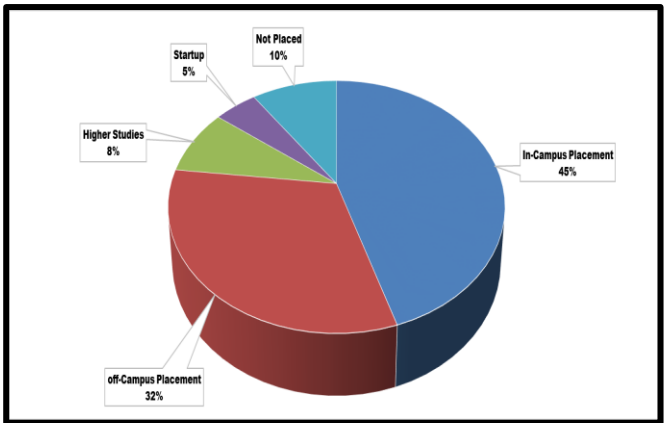


Fig. 8 Student Placement 2016

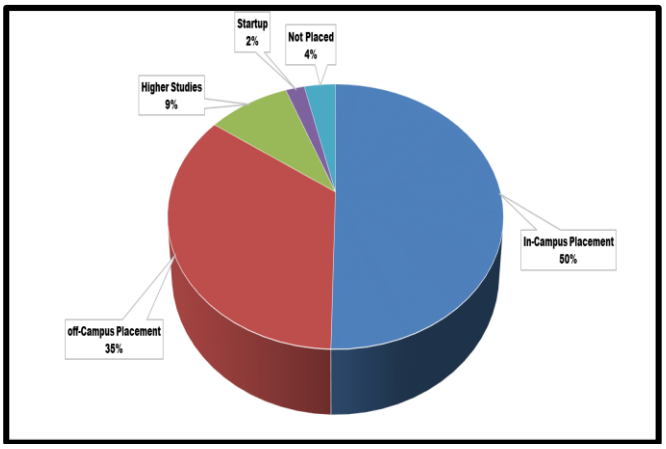


Fig. 9 Student Placement 2017

5. Challenges

We faced number of challenges while implementing and even after implementing the theCN in Atharva College of Engineering.

- Any change faces resistance in the system initially. For the same reason it was very important for us to create awareness and train the all the stakeholders of theCN in ACE. It proved crucial to make people to take their first step towards accepting change.
- Even if people have their account on theCN, it was very crucial to make sure the platform is used on regularly and daily basis. Something new should be updated in respective course groups by both faculties and students.
- To make it more interesting and challenging a specific Anar Seedss achievement targets were set for both the faculties and students and a review of the same was taken by the team on monthly basis.
- The next challenge was having a meaningful exchange on theCN. To achieve the Anar Seeds Targets, it was found that some students were trying to use an un-academic language and conversations on theCN, with the help of which they were able to earn Anar Seedss for those comments and conversations. The CN team made sure these kinds of things don't happen by scrutinizing their conversation.
- It was observed that due to various reasons some students were not able to do their online submissions and quizzes by given deadline which made the submission link inactive. In such scenarios faculties had to revise the deadline.
- Quizzes faced a major problem with students referring online resources using Internet facility to complete the quiz, as they could attempt the same from any place. It has concerns regarding proper supervision of the quizzes while students attempt it. Later it was decided quizzes to be made online and attempted during students' practical slots in laboratory for 10 minutes.
- Bringing parents to the platform was indeed the most concerned part while implementing it. Most of the were not having valid email ids at the same time many of them were a little technology shy. We had to call them for Parent Teacher meeting and educate them regarding the same during the same.

6. Conclusion

Implementation of the Course Networking (theCN) has greatly improved Teaching Learning Process at Atharva College of Engineering. Course Networking provides online anywhere access, easy search and organization of data, which enables us to extend learning process beyond the classroom boundaries. We have found a great scope and a way of improvement in the traditional learning process and the results have assured us that teaching learning can be more interactive, creative and innovative. During our process we have found that Course Networking not only plays a vital role in connecting people but also plays an escalating role in education. All the three stakeholders (the Institution, Students and Parents) on a common platform at the very same time provides a great level of transparency and a sense of responsibility to make things better and continuous efforts towards excellence in what we do.

Acknowledgement

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