

Best Practice 1

1. Title of the Practice

Implementation of a Flipped Classroom activity through MOODLE courses on departmental MOODLE platform.

2. Goal

- (i) Improve programming skills of students for better placements for MCA.
- (ii) Bridge the Curriculum gap for CSE department

3. Context

Under the flipped classroom, the traditional order of classroom events is reversed. Students view lecture materials, usually in the form of video lectures, as homework prior to coming to class. In-class time is reserved for activities such as interactive discussions or collaborative work — all performed under the guidance of the teacher.

In traditional lectures, students are bound to the pace that the instructor sets for the course. If a student has difficulty understanding a concept during a lecture, he or she is forced to slow down the rest of the class by interrupting and asking for additional clarification — or do his or her best to keep up and ask for guidance at the end of class.

4. The Practice

We implemented this activity by creating online courses for MCA year I and II and CSE students on our departmental MOODLE platform named <https://supergeek.gnomio.com> and <https://csemitra.gnomio.com>. We provide videos of a lecture to the students through MOODLE platform. After going through the videos, the students attempt the assignments and tests. This is followed by a discussion during classroom session. This session was included in the routine academic timetable. The course chosen was based on programming basics of C and C++ which is a part of almost every placement technical test. This course was not a part of the academic curriculum for MCA. As far as CSE department is concerned this platform was used for topic based quizzes and/or innovative

assignments. The course study material was made available to CSE students through MOODLE.

Evidence of Success

The MCA class comprised a good mix of fast as well as slow learners. The tests and assignments were attempted by all students after watching the videos. This was followed by a classroom session for explanation of the topics covered in the test and assignments. It was analyzed from the attendance of the classroom sessions that slow learners were regular where as fast learners were irregular during these sessions. However, the test results are indicatives of better performance by the fast learners as well as slow learners. Thus the goal of flipped classroom learning was attained.

As far as the CSE students are concerned the tests and assignments were attempted by all students after reading and analyzing the study material provided through MOODLE. This was followed by a classroom session for explanation of the topics covered in the quizzes and assignments. It was analyzed from the attendance of the classroom sessions that all the students were regular and attentive during these sessions. The internal assessment indicates a marked improvement in the performance of those students who regularly attended the MOODLE courses.

Problems Encountered

Inculcating a habit and discipline of coming prepared for a particular class. Initial hesitation regarding online courses was observed.

BEST PRACTICE NO. 2

1. Title of the Practice:

Improvement in Student activities concerned with prolific technical development

2. Goal

- Exposing students to current technologies so that their interest should be turned into passion which would help them to reach their goals.
- To develop facilities to access literature so as to develop students themselves in rapid changing technology.
- Enlighten the students about history and need of automation in various sectors and provide platforms for industrial automation and software for automation.
- To identify the technically significant areas.
- To organize program for training faculty members for coming together on an online platform and building an immensely powerful knowledge sharing resource community.
- To motivate students to learn latest technologies as the technology makes students more curious and enthusiastic about learning.

3. The Context

- Discuss and motivate the students about the latest trends in the core computer science and telecommunication industries and about the technologies used in industrial automation.
- Students are able to learn skills and develop more applications so that our system is strengthened.
- Aim to empower youth to be leaders of tomorrow with discipline, quest for knowledge and strong ethos to uphold the spirit of professionalism.
- Students are imparted with lot of technical skills like paper presentation and project competition at national level events.

4. The Practice

To achieve the goal, the needs fulfilled by the department with forethought and long term vision and missions are stated below to take students to the peak.

- Department frequently arranges guest lectures on recent developments in the field of Electronics and Telecommunication Engineering to motivate the students.

- Technical quizzes and competitions are held regularly to enrich their academic competitiveness.
- Students are encouraged to do in house projects under the guidance of faculty.
- Central library and departmental library are kept open for long hours for benefiting students to study beyond college hours and separate departmental library is also available for the same.
- Audio visual equipment is used extensively so as to aid visual retention.
- Multidisciplinary needs are also fulfilled by organizing expert lectures from eminent alumni student and experts from industries on area which are required to make students employable and understand life-long learning.
- Alumni do a proper mentoring and guidance of existing students on a regular basis.
- Students seminars are arranged which involves learning groups, provide an opportunity for active discussion on relevant topics beyond the curriculum. They help to develop transferable skills such as communication and team work and offer a platform to participate fully in the learning process.
- The department always tries to develop communication and soft skills of students. Incentive training is imparted in the area of group discussion, interview techniques, verbal ability, presentation and competitive techniques by professionals at the start of third semester.
- Institute organizes TECHKNOW EXPERTS, a national level Tech Fest each year. Students explore their organizing skill and exhibit their talent by participating in technical events like robotics, paper presentation, poster presentation, project competitions and LAN gaming etc.
- CDEEP-NMICT facilities of e-learning have been introduced to enable the students to keep pace with the technological advancements through expert lectures from IIT experts. This system enables interaction between the IIT experts and students through video conferencing making teaching learning more effective. The students also have an opportunity to learn on their own by means of referring the NPTEL facilities, DELNET services, Reference services, Reprographic services, OPAC, Information service from CDROM, current awareness service, new arrivals, Documentation and information service.
- Student chapter provides interactive platform to learn number of advanced level concepts on their own. The department has IE(I) and IETE student chapters in order to motivate the students towards self-learning.
- Students are motivated to learn relevant software and latest technologies by performing projects.
- Faculties are also motivated to learn latest technology by attending the workshops in order to keep themselves abreast with recent development in the field and

accordingly to provide additional inputs while teaching so that number of students can find solution to their difficulties other than academics.

- The institute organizes the technical events which help them to become self-dependent, to form the clubs that help them to choose the area of interest.
- Students are given enough opportunities to explore themselves through various technical activities such as national level project competition, technical paper presentation, technical group discussions and preparing for personal interview.
- The student council, comprising student representatives, plays an active role in academics, training and placement, technical, sports and cultural activities.
- Apart from setting high standards in academics, the department focuses on developing self-discipline in students.
- The department has experienced faculty and state of art infrastructure to provide quality education.
- The department provides numerous opportunities and platforms to students for excelling in academics and co-curricular activities.
- Students have a very good rapport with the teachers working as counsellor and T&P coordinator. They try very hard for students to get good jobs.

5. Evidence of Success

- Students have taken active participation in various workshops organized at the department.
- Students participated and demonstrated their innovative ideas in National level technical events organized by various institutes every year.
- For deep value thinking mini project competition EVOKE 2018 held every year.
- IE(I) local centre1 presents Best Student Award by acknowledging student performance regarding curricular, co-curricular and extra-curricular activities.
- Students access online research journals of international repute, NPTEL, audio/video tutorial in order to familiarize with recent technology trends.
- The institute has submitted large number of innovative project ideas in KPIT Sparkle 2018.

6. Problems Encountered and Resources Required

- Improvement is required in computing and programming skills of students.
- Improvement is needed in the employability of the students through refreshing aptitude techniques and current technologies.
- There is need for enlightening the teaching skills for computer languages and open source environment.
- The institute being located in the non-metro area, procurement of electronic components, sensors and special function ICs become difficult.