

## **Best Practice - 1**

### **Title: One Semester Industrial Training**

**Objective:** To give the students the idea of actual industrial environment and to groom them to take up their due place in industry after the completion of study period.

#### **The Context:**

The bookish knowledge the students gather during the period of study does not give them enough confidence to start their careers in industry immediately after the graduation. Moreover the various industrial surveys have been revealing that engineering graduates lack the necessary confidence and skill set required in industrial environment. As is known that the learning is enhanced many times by doing rather than by just reading, this concept of six months industrial training was mooted to help the upcoming graduates adapt to industry seamlessly. Also it would help industry in getting a trained manpower rather than manpower having only bookish knowledge.

#### **The Practice:**

To bridge the industry academia gap, the industrial training provides the necessary impetus. The training is imparted after completion of 6/7 semesters of study by the time the student has gone through all theoretical concepts in his particular branch and is ready to experiment. The students are required to select an industry of their choice and they are supposed to undergo a six months training. It is similar to on- job training which provides the necessary exposure to physical and actual industrial world. This not only makes the students readily acceptable to the industry but does a lot more good to enhance their confidence to work in real world environment. Taking leap from laboratory scale experiments to apply the concepts learnt to real machines in industry completes the circle of education. The students are required to take up an industry based project to solve industry based problem. The training evaluation is done twice during the training with active participation of industry personnel. The final evaluation is done with an industrial expert.

The major constraints are that industry and academia are both doubtful of each-others' intentions. The industry feels that in case they train a budding graduate for six months and then he decides not to take up the job with the company, then it will be at loss. The academia is apprehensive that the industry might not give required inputs. But these were overcome by establishment of institute industry interaction cell. Another constraint was giving the students a semester off for this work.

#### **Evidence of success:**

The students who have undertaken this training are readily accepted for employment in industry. The industry especially is more open to students who complete the real time project which is direct benefit to the industry. The placement of students has consistently been rising every year having almost doubled from the base year of 2013(243 placed) pass out batch to the current batch 2019 pass out (413 placed). Also the figures for the students placed in companies in which

they undertook the training has been rising constantly every year starting from 02 students for 2015 pass out batch to 30 students for 2019 pass out batch. Also the rising number of students getting good amount of stipends during training period is on the rise showing increased acceptability of the companies to train and prepare them for eventual induction. This is a strong indicator of increased employability of the students.

This training is unique in the sense that it prepares a student to take up the role of practicing engineer with ease.

**Problems encountered and resources required:**

As stated earlier there was a problem of lack of trust between academia and industry. But this was covered with the institute industry interaction cell. In order to mould students into this training, regular industrial lectures are held to help students identify the industry of their choice. No additional resources are required as the training and placement department staff along with departmental training coordinators coordinates this activity.

Notes:

This practice is giving good results and may be adopted by others to raise the employability levels of the students.

## **Best Practice - 2**

Title : **Objective Evaluation**

### **Objective:**

To create measurability of the level of learning attained by the students

### **The Context:**

The outcome based learning is aimed at equipping students in higher education with higher order thinking skills. These skills should be further measurable and enhance the effectiveness of learner in professional life.

In implementing such a practice there is a greater need to alleviate the fears of both the faculty and the learner. The faculty as well as students has the feel that perhaps such a practice being unconventional is going to be burdensome and tough for them to follow.

Also the practice requires setting of well-defined goals each course to be taught. These goals have to be synchronized with the available resources in terms of teaching and other infrastructure as well as the expectation of prospective workplaces. As a consequence it was a challenge to address the above bottlenecks for successful implementation of the practice.

### **The Practice:**

The practice was adopted in two stages. Initially in the first stage the practice was adopted for UG level courses. Later in the second stage it was extended to PG courses as well.

In order to achieve the stated objectives, deliberations were made and it was finalized to follow a two pronged strategy. This strategy included formulating clear and objective course outcomes for each course on one hand and designing a question paper format which would enable to measure the extent of learning with respect to course outcomes.

Accordingly for the first component clear and objective course outcomes were designed for each course in all programs.

For the second component, a three-member committee was formed to recommend the question paper format (internal as well as external) at UG level according to revised Bloom's Taxonomy.

The question paper for mid semester tests were so designed that they comprised of questions based on both lower order thinking skills (LOTS) and higher order thinking skills (HOTS) with a specific weightage to each component and were also in line with the laid down course objectives / outcomes.

Similarly the question paper for end semester examination designed consisted of three sections / Parts which would address to the evaluation needs of both LOTS and HOTS and would also comply with the course outcomes.

For each subject/course, the question paper consisted of a specific percentage of numerical content. This numerical content is helpful in estimating the analytical and evaluative capabilities of students.

This practice put certain restrictions on paper setter to assign a specific weightage to each level of learning in the question paper. Also it posed a challenge for the teacher to ensure that the classroom teaching addressed to achievement of course outcomes at various learning levels. Additionally it imposed on the learner to mend their learning styles .In other words the learner had to do away with rote learning.

### **Evidence of Success:**

Once the Outcome based learning was implemented it became all the more important to see whether it achieves the expected results. This required monitoring on several quarters that included dissemination of the planned practice process to all concerned, and later, once adopted it required to review if the question papers being prepared were incorporating the designed format in true spirit.

Further screening committees at departmental levels have been made to review the process of question paper preparation and report any shortcomings for revision suitably. These committees scrutinize each question paper prepared by the faculty before it is administered to the students. If are there any shortcomings, these are reported and corrective action taken before the question paper is ready for use. Since the adoption of the practice the results have been very encouraging towards this end and progressive improvement is being observed in the quality of the question papers being set.

### **Problems Encountered And Resources Required:**

Outcome based learning practice requires a total change in attitude of the learner as well as the teacher. It lays emphasis on the learning outcomes which are predefined in terms of goals. There is required a continuous effort on both learners as well as facilitators to plan the course in such a way that the outcomes are achieved. Also it requires continuous monitoring to ensure that efforts are in the right direction. In order to ensure these points teaching faculty which is a rich resource with the institute were utilized to monitor the implementation and progress of the adopted practice. In line with this committees were formed to scrutinize the mid semester examinations question papers (which are conducted twice in a semester) and rectify any anomalies observed before these papers are given to students when they appear for the examinations.