ABSTRACT

In India engineering is one of the preferred choices for good students at the 10+2 level. The competition for the top institutions is intense with students spending a lot of time and money in coaching classes to get the added advantage for the competitive entrance tests. This demand for engineering has resulted in a mushrooming of a large number of engineering colleges in the country. Despite this, the industry complains of an absence of trained quality engineers.

The literature implied an overall need that graduates of engineering are and want to be creative, and the engineering industry wants thinkers and problem solvers. The author believes that there is a need for strategic policy interventions at multiple levels – pedagogy being one of them - to strengthen engineering education in the country.

The standard and widely prevailed pedagogy throughout Indian technical education system is very traditional. The normal and usual approach has been to divide any Engineering program in a number of subjects or courses and then each subject into structured lectures, tutorials and practical sessions. The time plan is prepared beforehand by the faculty and the course is covered in 16-18 weeks time.

The drawbacks in this usual approach have been many:

1. The students are passive listeners
2. The students completely lack any presentation skills
3. They are a less motivated lot
4. Simply because individual performance is what matters, the students generally lack the ability to work in team
5. They normally are not able to develop the right kind of aptitude and attitude
6. Since they do not have any task at hand and have to just listen without aim to what the tutor has to say, they do not think and remain conceptually weak.

In order to overcome above shortcomings, the concept of active or Problem Based Learning was introduced in one of the engineering colleges in North India: Chitkara Institute of Engineering and Technology. While the mode of broader evaluation remains the same -holding of end semester theory and practical examinations by the university, a unique strategy has been worked out which integrates and supplements the usual approach of theory, tutorial and practical classes to that of Problem Based Learning. This research work and the thesis presented here describes the approach, designing of Technical Problems to cover the subject matter, the preparation of
students for PBL, the evaluation strategy and the feedback, students give in support of PBL. Tremendous difference in knowledge, skill and attitude of the treatment and control groups was observed and recorded; the presentation skills and the teamwork shown by the PBL group, were also commendable.
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