

Required Revolutionary leaning types in Engineering Education in India

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Abstract: The aims of the engineering institutes are to provide skilled engineers to fulfill the needs of industry and society. This is the field of development, improvement as well as innovative field. Lot of revolutions comes in teaching learning in technical education system for fulfilling the current demand of industry. This paper deals with revolutionary leaning types in engineering education in India. This paper inspects the demands by faculty as well as students in teaching learning methods. This paper includes some revolutionary trends in engineering education in India.

Keywords: Learning, students, institutes, faculty, evaluation.

1. INTRODUCTION

Engineering is the development field in India. NBA, AICTE, UGC, Universities and institutes focus on the teaching learning improvement in engineering education. Lot of pedagogy methods used for improvement of engineering education. Whole world is focusing on technology skills of industries are facing problems due to less skilled engineers. Industries are demanding skilled engineers for enlargement of industry. Institutes are working on lot of skill development methods. The industry institute interactions developed. Still engineering institutes are facing problems for placement as well as entrepreneurship development. Very less students are starting their entrepreneur after graduation or post

graduation. This may be 1% or 2% compare to students working in industry. After graduation and post graduation students are doing certificate courses and then joining the industry. If they join through campus Interview they have to go through training. There is remaining small gap between industry and institute i.e., is nothing but engineering students are not able handle on job immediately after graduation. They have to go through training. This gap should be reduced. The students must be developed they can handle the jobs without training immediately after passing from graduate.

II. OBJECTIVES

- Understand teaching/learning types followed by faculties.
- Understand learning types accepted by students
- Bridge the gap between students and faculties
- Develop revolutionary learning types for development of engineering education in India.

II. FACTORS AFFECTING QUALITY OF ENGINEERING EDUCATION

The following factors affect quality of engineering education:

- Methods Examination/Assessment System
- Students Learning attitudes
- Students Feedback system
- Extra burden of administration work on faculties

III. TYPES OF LEARNING

Some learning types as well as faculty problems and students' demands are discussed below.

A. Learning by doing:

Instead of listening students are interested in doing and learning. But they are not interested in practical. When results will not come in practical, immediately students call to teacher and tell to find out the problem. If teacher not told tell students to find out, they blame to teacher. They avoid solving the problems. Students target is only to finish the journal and ten or 12 experiments. If any one teacher focus more experiments and problems, his or her feedback come down. Management will blame to teacher. No smart assessment will do by management.

B. Only Theory Lectures:

Some of the subjects are based on only theory. They lecture hour is one hour and students become bored. As per the research held the students listen actively only for 40 minutes. There will be no problem for mathematical problem solving theory courses. Many teachers include all modern tools e.g. PPTs, video clips, quiz, group discussion, Role play, analogy, summarization, and then also students are not interested if the lecture is last or second last lecture. Nobody are taking such cares, time table in charge will tell that, it not possible to fit the lecture at morning session. The whole responsibility goes to

teacher. The learning of such subjects will not be done effectively. The learning outcomes are less.

C. Industrial Internships:

No students handle the industrial ongoing jobs. This is the major problem of engineering education. No Industrial Internships are compulsory for students. The industries not directly associated with institutes. They are linked with placement, sponsored projects, industrial visits and industrial training. Our engineering students are not ready to practice on job after degree. This is the huge demand from students as well as parents.

D. Virtual classrooms:

Undergraduate students attend the classes and practical regularly. The learning of graduate and postgraduate students doesn't want to attend the classes. They want virtual classrooms. Students demand is that do not make compulsory for attendance.

E. Short communications:

The one more trend is that students want short communications to be available at any time anywhere for understanding the concepts.

F. Audio and video clips of courses:

Students tell that instead of attending the lectures teachers why not providing the audio and video lectures of courses. When we face problems we clarify our drougths. For assessment they can conduct surprise tests, assignments based on lectures.

G. Blending learning:

Students are interested in blending learning. Blending learning engage the students instead of enjoying the students. This learning involves number of techniques with different technologies. Some of the examples are classroom with Internet facility, teacher acts as facilitator and guide. This learning includes actual job tasks with instructional

technology. This learning incorporated online activity.

H. Workshops and seminars:

Lot of workshops and seminars are engaged for enhancing the knowledge of students. The expected output is waiting from all sides of education.

I. Mentorships:

Mentorship is the very good system in engineering education if it works effectively. Lot of mentorships is involved for curricular activities. If mentorship is changed in skill improvement of students it will become impressively.

J. Networking:

Teachers will not do without the students help. If the network is for development of students for skill enhancement works effectively. The final year students handle the big or ongoing consultancy projects with the help of teachers. Third year students help them practically and second year students helps for supporting to the students. First year students will engage for mentoring and ethics and courses and basic development. Some institutes are running as hobby club or Jugad club.

K. Self skills development plan:

Every student must be master in any one-technology skills while passing from institute. Otherwise final certificate of students will not be issued.

L. Research in engineering:

Post Students mostly engaged in research. Just passing theory and doing one project is to be changed with research projects.

M. Socio-economic systems:

Students must aware about social responsibilities and requirements. They have to be

keeping engaged in social problems by technologically for socio-economic development.

N. Interactive lecturers:

Face to face lectures using all the interactive teaching tools. Some of the teaching tools are power point presentation, summarize, blackboard teaching, personnel presentation, term papers, quiz, group discussion, debate, roll play etc.

O. Case study and evaluation and solution:

For development of students' assigning them with case studies, which helps as well, enhances their skills. Faculties have to find out such case studies, which increase the course knowledge and increase the skill of students. This is the group activity.

IV. METHODS AND PROCEDURES FOLLOWED BY INSTITUTES

Institutes follow number of methods for evaluation. Some of them are given below:

- Which methods work effectively
- Efficiency of methods
- Taxonomy and objectives
- Academic position in world
- ABET and Accreditation
- Evaluation of learning
- Evaluation of skills
- Feedback system

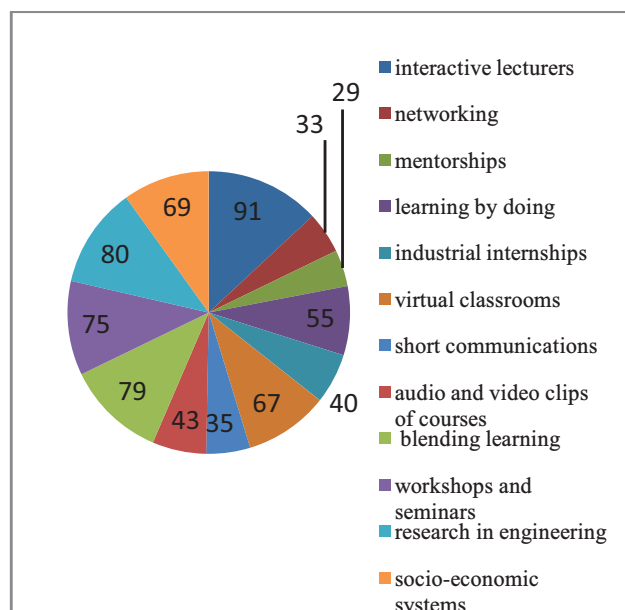
V. REVOLUTIONARY LEARNING TYPES AGREED BY ENGINEERING FACULTIES

Some of the learning types agreed by engineering faculties in India. Faculties are involved in developments of students. But they are afraid about the evaluation of teaching systems, which is based on students' feedback not on the skills, and knowledge of students acquired. The feedback system must be smart feedback system. Feedback

system must avoid taking advantage of students as well as faculty members.

Some of these are given below:

- Interactive lecturers
- Networking
- Mentorships
- Learning by doing
- Industrial internships
- Virtual classrooms
- Short communications
- Audio and video clips of courses
- Blending learning
- Workshops and seminars
- Research in engineering
- Socio-economic systems

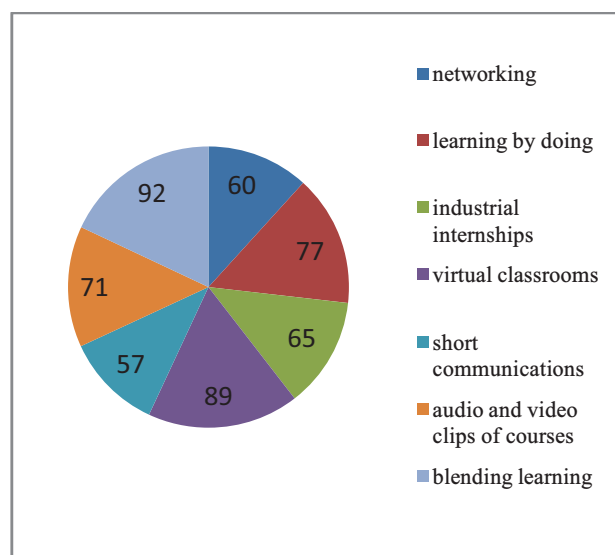


VI. REVOLUTIONARY LEARNING TYPES ACCEPTED BY ENGINEERING STUDENTS

Some of the learning types agreed by engineering students in India. Students are not interested in traditional lectures if faculties using the modern teaching tools. These are given below:

1. Networking
2. Learning by doing
3. Industrial internships

4. Virtual classrooms
5. Short communications
6. Audio and video clips of courses
7. Blending learning



CONCLUSION

Teaching Learning responsibilities handled by engineering faculty with different methods. There is major need of balancing between students' demands faculties teaching learning methods and requirement of industry and society. If each institute handles Revolution in engineering education carefully and effectively with the help of faculty and students, lot of problems will overcome. The Indian technological development will happen. The India achieves the vision of 2020.

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