

A Thought for Industrial Training of Technical Teachers

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ABSTRACT:The industrial training organized for technical teachers of diploma polytechnic teachers is essential to improve teaching learning process. The Maharashtra State board of technical education initiated Industry Institute Partnership Cell (IIPC) to concentrate on this activity for different engineering streams. The IIPC have intellectual and resourceful liaising with industries and Training institutes which help in keeping academia and industry connected to each other for better development of academia resources and industrial input given after diploma completion. The teacher training programmes are conducted to upgrade the course content and exposure for teachers having live industrial experience which helps in in teaching learning process and delivering outcome base curriculum course content more effectively. Industry's needs keep changing with introduction of developed technologies and to train all students for that in industrial environment it would be impossible. So to cater this condition teachers get updated with emerging trends and technologies of industry, they can impart that knowledge to student to make curriculum more impactful. This document contain need and necessity for industrial training required for teachers and current survey of MSBTE Mumbai for Need of Teachers training for polytechnic teachers and comparison with industrial experience to teaching experience.

KEYWORDS: Outcome Base Curriculum, IIPC, MSBTE, Training Need Analysis, Course Content Development, Marked Industrial Experience.

I. NEED AND NECESSITY OF INDUSTRIAL TRAINING

The teaching learning process mainly involved the student, teacher and the learning resources. The quality of passed out students mainly depends on the preparedness of student, teacher's quality and experience. There are other factors also such as information resources, physical resources, conducive environment etc. but they can be taken care easily. The outcomes of technical education consist of cognitive as well as psychomotor technical skills along with the comprehensive body of knowledge. Though the skills are universal still the employers of engineers demand candidates specific skill set so that the candidate will be ready to works in their industry. So while imparting technical skills the teacher involved in the process of teaching learning should have goon through the environment of industrial.

If we study the teachers' recruitment process and its eligibility criteria we find that the newly graduated candidate can also join as teacher. The various Engineering institutes have no option to accept the teachers selected by this process. The teacher goes on teaching and teaching for hours together which is simply reproduction of the contents which he knows. The student received it and they also reproduced in the same way. The significance and purpose of knowledge however remain aside, ultimately this leads to the dissatisfaction of the employer. Since long the industries are giving feedback regarding the lack of practical knowledge, soft skills, industrial exposure, safety precautions, values and ethics. The issues have been deliberated so many times in brainstorming sessions of industry personnel and academicians. Generally the recommendations are as follows.

1. Induction training to the newly admitted students.
2. The courses like development of Generic skills, student centered activities, micro project to understand the fundamentals, group activities etc.
3. The implants training in the industries for students monitor by their teachers.
4. The Industrial training for the teachers.

The last issue of industrial training, I wish to elaborate more because it is phase changing issue. It creates larger impact on teachings learning process. The student's attitude is quite different when they listen to the person from industry or the experience teacher who has spent certain considerable period of life in the industry.

II. CONTROL ATTRIBUTES OF TRAINING

The following issues must be dealt properly prior to sending the teacher for industrial training.

1. *The Period Of Training.*

The period of training should not be less than one year. The industry cannot assign any fruitful task to the candidate with lesser contact period. Preferably it should be two years. In some of the cases faculty exchange from institute to industry or vice versa can be thought for 1 to 2 years.

2. *Involvement Of Teachers In The Industries.*

The strategy should be accepted by both the agency industry and institute to make the involvement of teacher during the training so that the teacher can under the real experience in the industry. Otherwise the teacher will perform observer's role that is nothing to do and not to remember i.e. allowing the teacher to take part in actual processes. Teacher shall be given the work sheet like regular trainee employee. During the training teacher will be employee of the industry. Whatever formalities need to be completed for this shall be taken care of by the both the parties.

3. *Benefit Or Loss To The Industries Due To Such Facilities Provided By Industries.*

This need to be worked out on priority otherwise the activity will be taken as one of the episode of big story where story never proceed further. The provisions for which can be thought of because this is the valuable investment in Manpower Development for future.

4. *Percentage Of Teachers Can Avail This Facility.*

This is again a crucial issue because if you scrutinize the existing scenario the picture is not presentable. Very small numbers of teachers are having industrial experience. Large numbers of teachers need to send for industrial training.

5. *The Compulsion Regarding Attending The Training After Making Appointment.*

It should be mandatory for every teacher who joined the service without industrial experience.

6. *The Association Of Teacher With Industries.*

The association for shake of industrial training is not enough the teacher should be the member of industry think tank. Teacher shall perform a role of consultant and researcher on continual basis even after training. Then and then we can say the teachers are professional teachers imparting professional education.

7. *The present provision in various situations.*

Presently many universities and prime institute like NIIT and IITs are having all provisions but they are few in numbers. The masses i.e. government institute at district level, self-finance institute the facilities are quit lesser than required. In some cases we are providing a week or two week trainings in the industry that is also creating some knowhow for teacher but it is not enough to the requirement of system.

III. SURVEY OF TNA

MSBTE – Maharashtra State Board of Technical Education Mumbai conducted survey for Training Need analysis by Technical Teachers of Diploma institute in Maharashtra. The streams involved in surveys are engineering, pharmacy, architecture, Food Technology, Travel and Tourism, Leather Technology and Management. The survey conducted by mode of electronic media using google form and MCQ were asked. The MCQ asked in survey are shown in following chart with selection options. The area/sectors related to academia and industrial zones are given to survey attendees on which they are willing to get training.



Area of MCQ	MCQ Response options		
<ul style="list-style-type: none"> • Pedagogical Approach • Assessment Methods and Approaches • Curriculum Designing • Research and Development • Basic Technology • Cutting Edge Technology • Leadership Skills • Governance • Innovation - Incubation • Finance • Quality Assurance • Orientation and Refresher Programme 	Need of Training : 1- No Need , 2- Low Need of Training, 3 - Moderate Need of Training, 4- High need of Training, 5 - No Reply .	Abbreviations for Preferred Duration: 1- One week 2- Two week 3- Three weeks 4- Four Week 5.- Continuous up gradation	Abbreviations for Preferred format: 1. FF = Face to face 2. OFM = Online facilitated module 3. OSP = Online self paced 4. BP =Blended Partial online /Partial Face to face 5. CB = Credit based approach

The Survey also collects information about faculty’s educational background and Industrial exposure background. This gives clear picture about current condition or current liaising of teachers with industry and exposure to latest development.

Sr. No.	Attribute	Findings
1	No of Institute taken in survey	9
2	No of Faculty Members taken part in survey	187
3	Avg. Education of Faculties	Bachelor of Engineering
4	Avg. Teaching Experience	13.5 Years
5	Avg. Industrial Experience	1.2 Years
6	No of Faculty having Industrial Experience less than 1year	118
7	% of Industrial Experience less than 1year	62.99 %
8	No of Faculty NOT having "MARKED" industrial Experience *	137
9	% of NOT having "MARKED" industrial Experience*	73.56 %

Training Need Analysis Survey Report

IV. CONCLUSION

In nutshell the industrial experience of teacher is utmost essential to develop the employable and useful engineers for industries. With about 73% faculties not having Marked experience, the project of implementing Outcome Based Curriculum - “I” scheme from 2016 by MSBTE – Maharashtra State Board of Technical Education Mumbai, where we can relate I- Industry Institute liaison, it’s time to take the issue on table for development of employable and useful engineers for industries and societies.

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