

PROFESSIONAL TRAINING FOR TECHNICAL TEACHERS

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ABSTRACT

In this paper, it has been pointed out that anyhow the professional training for teachers involved in higher education has been overlooked. With spread of higher education, now we are realising that teachers training like any other pre-service training for several jobs including IAS, IPS, IOF, etc., need to be introduced without any further delay. The areas for technical teachers' training have been identified and 3 training modules of total 50 weeks duration have been proposed. It is further advocated that the entry point for teaching and administrative jobs in Technical Education Department should be the lecturer cadre with compulsory pre-service professional training of 50 weeks. It is expected that the bodies, like, AICTE, MHRD, etc., shall take appropriate moves to help maintain the quality of technical teachers through such programmes.

1.00 INTRODUCTION

Education plays a very vital role in promoting the socio-economic status of a country. Technical and Management Education, in particular, can lead us a long way on the road of national well-being and prosperity. Obviously, the teachers who translate the National Educational Policies into the day-to-day actions will have to play a very responsible role in turning the quality product out of the institute.

2.00 SCENARIO IN INDIA

On the engineering education side; looking one or two decades back or beyond, one can easily realise that in each university in India, there were hardly two engineering colleges. The system then was very simple and

manageable. The teacher was whole and sole. He was the curriculum designer, teaching planner, teacher, paper setter and even very often the evaluator. Whatever he used to cover in the classes used to be the syllabus and that used to define more or less the scope of examination. In spite of limited facilities available those days, there had to be some rapport between the teachers and taught. There hardly existed any quality audit of the education system as it was the seller's market. The product, therefore, produced by these very few colleges was acceptable to the clients, namely, pupils, parents, society, industries, public undertakings and Government. It can be argued that the products have done well and earlier generations of engineers have come up to the expectations. However, today the scenario has completely changed.

The characteristics of the present state-of-the-art in India can be attributed to :

- a large number of self Financed Engineering Institutes (SEFI) have emerged since the last decade or so. For instance, in Maharashtra, SEFIs have invested over Rs.700 crores, are turning 10 times more graduates than those being turned by the Government and aided colleges, and have generated sizable employment compared to any other sector established in either rural or urban areas.

- On the industrial development side in the first eight months of the year 1993, foreign investment worth over Rs.5792.5 crores has been poured as a result of the Government of India's policy of economic liberalization. World Bank has granted us a loan worth over US \$ 517 million dollars for the development of polytechnics in India.

- Industries can now hardly be provided with local protection. Industries are, therefore, thrown into cut-throat international competition. Industries are struggling for ISO 9000 certification. This has made industries more quality-conscious. For quality products with minimum cost, naturally they are out in search of trained technical manpower with appropriate quality and professional competence. This has compelled us the very first time in India to think about the quality of the passed out graduates from our universities. We are now slowly realising that the technical institutions (considered as service industries) will have to adopt, install and implement the concept of Total Quality Management in their functioning (1). Several organizations save universities on having identified the market needs have stepped in and doing roaring business in promoting trained technical manpower in various need-based areas, like, computer, electronics, tailoring, telephone operator,

Autocad etc. If we failed to pace with the time, the university graduates will have no place in the market, and we will simply accelerate the rate of unemployed graduates. After the publication of the New Education Policy paper in India in 1985s, several suggestions have been made to improve upon the situation. Some of these are : industry institute partnership, delinking degrees from jobs, identifying the mission and thrust areas, curriculum reformulation, etc. However, these have yielded very limited positive results. It is widely accepted that to ensure enduring respect and recognition the quality of product (i.e., graduates) is crucial. It has been left to German and - more spectacularly - Japanese and Far East industry to demonstrate the concept and reality of total quality - throughout all aspects of the product and throughout production lines. It essentially needs a capability to assess creatively, to use assessment as a personal professional tool to ensure quality control rather than simply to satisfy imposed regulations by Government, examination board or college administration. It, therefore, goes without saying that in institutes the quality of teacher is a central element of total quality. Unequivocally, the most important single factor in raising standards is the quality of teachers (2). It is most surprising that the college teachers recruited are put on the job directly without any pre-service or on-job-training provision. Whereas, in any other field right from the machine attendant to the cadres, like, IAS, IPS, IFS, etc., the incumbent has to undergo one to two years rigorous training. Anyhow, this point has been totally missed in case of higher education in general, and technical education, in particular (3) through stray attempts have been made by establishing Technical Teachers Training Institutes, Technical

Teachers Training Centres, etc. The results are not encouraging because these institutes generally provide in-service training, and the training is not that rigorous and quality oriented. Therefore, it is proposed that for quality technical teachers, all teachers must undergo at least one year well defined technical teachers' training programme organised by quality training centres. On successful completion of this professional training programme, the appointment in regular lecturer cadre can be given. Moreover, such an entry in lecturer cadre must be a pre-requisite for any subsequent higher cadre in the Technical Education Department, say, upto Secretary. Thus, professional training for all teachers at the entry point and later on while in-service need to be given. Nevertheless, design of professional training programmes need to be done carefully. The main objective of such a training programme shall be to turn professionally competent teachers for jobs in institutes. Evidently, we should clearly understand and raise the requirements for such a job. This calls for job evaluation of technical teachers.

3.00 JOB EVALUATION OF TECHNICAL TEACHERS

The teachers besides acquiring the chalk-board class room technology, are expected to imbibe appropriate traits which can make them professionally competent. Job evaluation of technical teachers can help us in this respect (4). To be a competent teacher, proficiency in the following areas need to be acquired :

- Effective communication skill : verbal, written and graphical.
- Updating necessary technical know-how and its collection,
- Knowledge of students psychology.

- Teaching planning and scheduling, class monitoring and lesson and lab-book preparation.
- Making teaching-learning process most productive.
- Curriculum design and development, paper setting, and students performance evaluation methods.
- Human relationships
- Capability of handling administrative issues.
- Conversant with modern methods of educational technology.
- Awareness of industry interaction areas, and related fund generating activities.

on having identified some major task requirements for a technical teacher's job, a professional training programme for technical teacher is proposed in the next section.

4.00 A PROPOSED PROFESSIONAL TRAINING PROGRAMME

Teacher's training is a continuing process. It can be divided in two components, namely :

- Professional (pre-service) training prior to employment; and
- In-service professional training after every 3 years' service.

It is proposed that at least one year's on-job-training should be given before putting a teacher on job. On successful completion of the same, the teacher should be absorbed in the regular cadre of lecturer. Further, after every three years service, the teacher should be sent for in-service training at least for 6 months. Appropriate in-service training should be given before promoting a lecturer to a higher cadre, say, right from Assistant Professor to Secretary of Technical

Education Department. No promotion should be given until appropriate training programme is successfully completed.

4.10 Major Features of the Training Programme

Presented below are some of the major features of the training programme proposed.

a. Recognise the areas for training :
Recognise the need based areas-present and future- in which teachers need to be trained. For example, design production areas in Mechanical Engineering Sciences, Network and lines in Electronics, etc.

b. Define
the area(s) precisely and set clearly the objectives for training.

c. Prepare
a training schedule, install and monitor it. This can be divided into three training modules as :

i. Module I : Eight weeks induction training Programme :

The coverage shall be the recognition of general areas essential for to be an effective teacher. Start from diverging concepts and reach to some convergent traits. For instant, one can start from divergent concepts like chalk-board technique, audio-visual aids, lesson preparation, monitoring teaching-learning process, causes for students' indiscipline, etc. and explore a trainee's potential in certain covering areas like audio-visual aids etc. Thus, the objective of this module is to initiate the trainees and make them aware of the elements of a technical teacher's job.

The induction training need to be

given under the supervision of the proven teachers in association with industry experts in and off the class. After this 8 weeks induction training, the trainee should prepare a report on the same and it should be evaluated by the teacher and associated industrial expert. A written examination can be conducted, if necessary. One week can be reserved after induction training for such activities as : trainees performance evaluation, planning and scheduling of the next training module and a few days break.

ii. Module II : Twenty four weeks on-job-training :

This is the core part of teachers' training programme. It includes both excellent exposure to class teaching and inplant on-job-industrial training related to the areas as already defined for a set of trainees. The training shall closely be supervised by both the expert teacher and industrial expert. A project report shall be prepared by the trainee keeping in view the training objectives set for him. Twenty fifth week shall be reserved for assessment of the project report by one external examiner in association with the internal expert teacher and industrial expert. Next one week should be utilised for planning and scheduling the next module and break.

iii. Module III : Eleven weeks training in 3 specialised areas

Training at least in 3 specialised areas is advocated in this module. The areas of specialisation identified are listed below :

- a. Institute administration.
- b. Fund raising activities, like, R & D, Consultancy, etc.
- c. Students performance evaluation techniques.
- d. Educational technology.

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| e. Library and Laboratory development. | n. Article and book writing. |
| f. Computer Aided Instructions and Computer Aided Learning. | o. Purchase and store keeping. |
| g. Curriculum design and development. | p. Teaching-learning process control. |
| h. Personality development programmes. | q. Financial management. |
| i. Co-curricular activities. | r. Enterprenuership development programmes. |
| j. University and Government affairs. | s. Total quality control in education. |
| k. Placement and training. | t. Productivity improvement techniques in institute. |
| l. Workshop management. | u. Students counselling and discipline. |
| m. Organising seminar, workshop and conferences. | |

The training programme schedule can be summarised as given below :

Module No.	Title	Duration (Weeks)	Nature of Trg.
I.	Induction Trg.	10	General awareness of task traits.
		01	Examination, next module scheduling and break.
II.	Core on-job-trg.	24	Class and implant trg withobjectives set.
		02	Project assessment, next module scheduling & break.
III.	Selective trg. in 3 areas	11	Proficiency in 3 areas of specialisation.
		02	Examination, posting onsuccessful completion of trg. and break
Total :		50 (weeks)	

d. Evaluation

of training programmes should be done scrupulously and appropriate modifications should be incorporated to make future programmes more effective.

5.00 LIMITATIONS OF TRAINING PROGRAMME

Unlike other jobs, the results of teaching job are seen only after a few generations. Therefore, design of training programmes for teachers is a complex job. The training programmes, therefore, should be well designed and such programmes should be monitored by proven teachers only. The existing technical teachers' training programmes can help us to be wary of the pitfalls and excellent programmes over a period of time can be established. Or else, half-hearted programmes shall prove to be abortive.

6.00 SCOPE FOR FUTURE WORK

The paper has suggested a professional training programme of 50 weeks duration for technical teachers who are interested in taking up teaching as a career. However, the proposed programme can be much improved so as to make it more useful and effective to the incumbent. For example, industry can certainly play a significant role in developing such programmes because eventually industries are going to absorb the product processed by these trainees. Likewise, the involvement of MHRD and AICTE in the design of such training programmes can prove of immense help. These are some of the potent areas which need further exploration.

7.00 CONCLUSION

In this paper, it has been pointed out that anyhow no carefull attention has been paid

to professional training for technical teachers. Technical teacher's job is a crucial one and it needs that every incumbent in the profession must go through preservice and in-service rigorous professional training programmes because the most important single factor in raising quality of students is the quality of teachers. The teachers' quality can only be improved through well designed training programmes. A 50 weeks training programme divided into 3 modules has been proposed for every person desirous of to take up teaching as a profession. Some limitations of such programmes are highlighted and scope for future work is also presented.

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