4. IN-HOUSE IN-SERVICE TRAINING TO JUNIOR FACULTY OF AN ENGINEERING COLLEGE: A CASE STUDY

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ABSTRACT

In the age of globalization, knowledge economy has been playing a key role. Engineering education is an engine of economy. Engineering colleges are (expected to be) power-houses generating knowledge. This is possible, if the faculty is competitive, committed and competent striving hard for excellence. Unprecedented massification of Technical and Management Education in India needs strategic planning to meet the requirements of the day. Unfortunately, very little is done in this direction, leaving rest mostly to chance. In this paper, a case study for in-house in-service faculty training program is presented. The training modules are mostly local need-based and can be used fruitfully to generate similar in-house training programs in other institutions so that the call of the hour, to a certain extent, can be met by them. The paper, it is believed, will be of interest to all concerned.

INTRODUCTION

The recent phenomenon of globalization has affected man's life in several ways. International competitiveness, downsizing, high perks, quality, cost and delivery consciousness on the part of customer, life-long learning and knowledge economy are some of its major visible outcomes. It has been internationally rightly accepted that education, especially Higher Education (HE), plays a key role in the socio-economic development of a country. Obviously, the process of globalization has an intensive calling demand for quality Higher Education. In HE sector, therefore, the concepts like turning students into good citizens striving for excellence [1], life-long learning [2], e-learning, etc., are being put to trial and experimentation and a few

of these like treat institution as service industry, faculty as facilitator/coach, Problem Based Learning, thinking curriculum, are already internationally put to practice [3]. In this entire endeavor, faculty has remained the core part, the heart of the matter. That "the quality and competent faculty begets quality and competent pupils" is the motto.

INDIAN SCENARIO

It is reported that hardly 7% of Indian student-population goes to HE out of whom hardly 2% enroll for Technical and Management Education. Quantitatively, Technical and Management Education has grown more than 50 times that of at the time of Independence of India. Statutory bodies like MCI, AICTE, UGC and others have

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been playing a major role in regulating quality and quantity of HE in India, but to a limited success. The Technical and Management Education in India is facing such strategic dilemmas as:

1. Whether, acquiring a degree, i.e., a graduate, is a "public good" or "private good"?

2. Whether should we follow capitalistic (profit oriented) education model of Western Countries or socialistic model as being tried in Cuba [4]?

3. How to meet the conflicting goals of education: education as a charitable activity vs. cost-based education without profiteering?

On shop floors, institutions are facing on one hand such issues as cost-based fee structure without profiteering, admissions by State admission committee, approval for rapidly rising intakes to various programs, very meager (10% as reported) employability of graduates, etc., and on the other; forces of globalization through agile market stress and demand.

One of the probable solutions to handle such issues is to make the faculty so strong enough, through pre-service and in-service training, that instructions will be of quality, relevant to the market demand, thereby enhancing employability of graduates. For achieving this, adoption of the principle of "90/10" can prove fruitful and rewarding. 10% of institutional activities are controlled purely by the general environment such as university administration, government policy, AICTE regulation, etc., i.e., 10% of institutional activities are not within the control of institution. Whereas, how do institutions react to the various issues mentioned earlier, as and when they arise, constitute 90% of their activities. Beyond doubt, institution-reactions are controllable and this can be optimized on the shop floor in the best possible

manner by the faculty itself, if pre-service and in-service faculty training is incorporated as a built-in feature of an organization that can help handle effectively the issues to a great extent. Institutions, therefore, will have to organize need based pre-service and in-service training programs for faculty as being practiced, for example, in Indian Public Services Sectors, like, Civil Services, IOF, Railways, etc., for training their officers and even by MNCs for their personnel, right from rank and file to top management [5-8]. Therefore, on having realized the role of training to employees, one such an experiment is done in the C. U. Shah College of Engineering and Technology, Wadhwan City, Gujarat. The case study is presented in the next section.

THE CASE STUDY

In the following sub-sections, some major features of the case study are highlighted.

The Status of the College

The C U Shah College of Engineering & Technology, Wadhwan City (Gujarat), aptly known as CCET, established in 1997 by the Vardhaman Bharti Trust, Wadhwan City, is approved by AICTE, Government of Gujarat and affiliated to the Saurashtra University, Rajkot. The College at present runs six UG and two PG programs approved by AICTE.

The College has excellent infrastructure, qualified and experienced faculty, e-library, quality ultra modern laboratory equipment, Internet to all, ladies and boys hostels, excellent canteen, student stores, parking, Photocopying facilities, cement campus roads, beautiful landscaping, etc. At present, the College has 112 faculty on roll. Some of the posts, especially at the level of professors; a normal phenomenon observed in India, are vacant due to obvious reasons. Staff-Students ratio is 1:14.83.

The Training Program: Nature and Duration

With a view to turn the faculty competent to meet the requirements of market, an in-house, in-service training program for junior faculty having three or less than three years teaching experience was completed during Diwali vacation of the academic year 2005-2006. The duration of the program was around 30 hours including 12 hours open sessions, having flexible timings spread over two months October and November 2006. The program was informal one; the sessions were interactive, each session lasting for preferably not more than two hours per day, scheduled by mutual convenience. Program faculty was in-house. The training program was designed with the full support and consultation of the Secretary of the Trust and all Heads of Departments.

The Training Program: The Venue

Class room has permanently fixed facilities like LCD, OHP. The seating arrangement of participants was such that they would form 6 cohesive groups, each consisting of 8 members. The participants were motivated to actively participate in the program, sometimes even using brain-storming sessions. The course material, slides, one video recorded training program (duration 2.5 hours, recorded by the first author in 1999) by Dr. P M Sapre, Ex-Professor, California, etc., were kept ready for distributing the written course-material to all participants on the very first day of training program.

The Training Program: The Contents and Conduct [2, 5-8]

Table 1 presents the modules of the program, contents thereof and schedule.

The open sessions (modules) IX, X and XI need further elaboration. During Session IX, the following factors have been identified for improving quality of teaching/instructions (not in the order of preference):

1. Planning.

2. Dress code for faculty.

3. Leadership.

4. Problem handling.

5. Teaching allowance and pay package comparable to MNCs.

6. Communication skill.

7. Quality consciousness.

8. Fearlessness.

9. Flexible instructional hours.

10. Self-confidence.

11. Motivation.

12. Personality development.

13. Subject preparation.

14. Education technology.

15. E-library, etc.

Out of the above, 6 factors are identified as critical ones. Each group is allowed to select one factor of its choice for further deliberation and presentation. A group comprises of a group leader and seven other members. The group is expected to prepare a presentation for 15 minutes followed by an interactive open session of one hour. Each group is given 3 to 4 days to prepare the presentation. The group is expected to make the presentation based on the module coverage and any other material accessible to them. Their experience and knowledge is also well acknowledged. Table 2 presents the formation of groups and their topics of presentation.

Participant's presentation in the open sessions was found to be very useful bringing out the followings:

1. Presentation was based on group

Table 1: The contents and conduct of the Training Program.

Sr. No.	Module No.	Contents	Date & Duration	Faculty
1	I	Education models like 2D Low man's PBL, etc.	18/10/2006 2 hrs	Dr. P. H. Waghodekar
2	II	Dynamics of teaching and learning process.	19/10/2006 2 hrs	Dr. P. H. Waghodekar
3	III	Teaching Methods, conduct of theory - practical classes, lesson planning, etc.	20/10/2006 2 hrs	Dr. P. H. Waghodekar
4	IV	Class control, discipline, code of conduct for teachers & commitment.	20/10/2006 2.5 hrs	Prof. M. A. Patel
5	V	Theory and practical clas control, teacher's behavior.	4/11/2006 2 hrs	Prof. K. H. Wandra
6	VI	e-learning, Telecommunication - Switching overview.	4/11/2006 2 hrs	Shri. J. V. Dhanesh
7	VII	Teaching-learning process through the horse's mouth.	7/11/2006 2.5 hrs	a video recorded trg. program by Dr. P. M. Sapre, Ex. Prof., California.
8	VIII	Basic skill, style, philosophy of teaching, 7 deadly sins; arrogance, boredom, laziness, rigidity, insensitivity, hypocrisy & stagnation.	18/11/2006 2 hrs	Dr. P. H. Waghodekar & Prof. P. H. Darji
9	IX	Brain storming session, factors affecting quality of teaching (brain-storming Session).	20/11/2006 1.5 hrs	Dr. P. H. Waghodekar & Prof. P. H. Darji
10	X	Presentation by groups (Open Sessions).	21-24, 27-28 Nov. 2006 1.5 hrs/day	--
11	XI	Valedictory and feedback.	28/11/2006 1 hrs.	--

Table 2: Group formation

Gr. No.	Group Title	Group Leader	Topic	Date of Presentation
I	M. Visvesvaraya	Ms. Astha Pandya	Planning	21/112006
II	Juran	Mr. K. R. Rathod	Quality	22/11/2006
III	Mahatma	Mr. M.B. Lakhtariya	Fearlessness	23/11/2006
IV	Shivaji	Mr. S.M. Jhala	Leadership	24/11/2006
V	Swami Vivekananda	Mr. J. A. Jadav	Self-confidence	27/11/2006
VI	Sharu	Ms. Shweta A. Sarode	Communication Skill	26/11/2006

thinking, the contents of the earlier modules, experience and knowledge of the group members.

2. The audience had an opportunity to analyze the presentation in a critical way reinforcing the concepts that would lead to quality teaching.

3. A team spirit was built up.

4. Promotes creativity and innovative approach of the group members.

5. Helped promote the style and teaching philosophy of individual members.

During the feedback session held on 28/11/2006 the participants proposed as under:

1. Pre-service and in-service training would be of much help to new/regular faculty.

2. Such programs need to be held at least once in a year.

3. Resource library for relevant literature including video cassettes, etc., need to be developed.

4. Training institutes like TTTIs can be invited to strengthen certain areas.

5. Overall, the training is found to be add-on for teaching career.

CONCLUSIONS

In this paper, the importance of Higher Education in the era of globalization and knowledge economy is pointed out. The paper, on having briefly highlighted the Indian scenario in respect of Technical and Management Education, presents a case study: an in-house, in-service training program for junior faculty of an engineering college. Some features of the case study like the composition of participants, faculty and modules of the program, etc., are presented but briefly. The program is informal one, interactive in nature, designed with the full support and consultation of the Secretary of the Trust and all Heads of Departments. The participants are invited forming six voluntary groups to present their views in respect of some factors like planning, leadership, self-confidence, fearlessness, communication skill, etc., affecting the quality of instructions. The experiment is found to be quite encouraging and motivating. The paper, it is believed, can prove of a great help to all concerned.

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