



DISHA INSTITUTE OF MANAGEMENT & TECHNOLOGY

Raipur

FOURTH IN-HOUSE WORKSHOP ON ENHANCING TEACHING & LEARNING METHODOLOGY (November 10-28, 2008)

A message to Faculty

Nov. 10, 2008

Welcome to the fourth In-house Workshop. The first one was organized from June 9 to 15, 2006 and continued on July 1 & 2, 2006. During that period the faculty members felt very uneasy and majority of them considered it to be a useless exercise. This was understandable because any change from a set pattern is always resisted. In spite of initial resistance, the second In-house Workshop was held from November 23 to December 23, 2006 and the third from May 18 to June 2, 2007.

As an outcome of these workshops, many of us prepared transparencies and power point presentations for the first time after joining this institute and used them for class teaching. There was a marked change observed in the attitude of the faculty for such an exercise during the second In-house Workshop. Contribution of the young faculty members has been significant. As a consequence, marginal improvement in the examination results of the students of our institute is observed. We need to **continue our efforts for improving the examination results with much more vigour and enthusiasm.**

Up till now the intention of holding such workshops has been to persuade the faculty to focus on teaching methods and thereby help students in understanding the subject and treating them as consumers of knowledge. Now the scenario is slightly changed. We have a fairly good number of senior and experienced faculty members and their number is likely to increase further in near future. We are also trying to seek permission to start M.E. programs in certain specialized areas of technology in our institute. We have initiated research activity in certain departments and some scholars are registered for Ph.D. degree. **CSV TU has recognized some departments as a place for research. We are proud that the Disha Education Society as a whole has been recognized as a Scientific & Industrial Research Organization by the Ministry of Science & Technology, Government of India.** In view of all this, we have to look this In-house Workshop from a slightly different perspective.

Today, I would like to touch upon certain points and urge to the faculty to consider them for adopting into practice.

A. **Our role as a teacher**

Teaching is an utmost important part of an academic institution and cannot be neglected at any

cost. Our basic task is to promote of the mind, acquisition of special skills, and advancement of knowledge; and above all to generate in the young generation a sense of purposefulness and mission, dedication, confidence in themselves and faith in the country's future. We must ensure that our teaching indicates the values of cooperation and mutual regard, honesty and integrity, discipline and social responsibility.

Any learning program depends heavily on the understanding of the teacher and methods of teaching. For effective class room teaching, all of us have been judiciously (hopefully) using transparencies/ power point presentations along with the black board. Also, whenever possible, tutors in the first and second semesters have been attending lecture classes. I personally will like these practices to be continued. In addition, the following points are being put forward for consideration.

- **Concern for weak students**

We need to care for those students, who regularly come to classes, appear to listen intently, take notes and who say “yes” when asked whether they understand, but on a class assignment or a test, they make abundantly clear that they haven't understood anything. Number of such students is fairly large. It is probably because they are weak in English. How can we change this state of affairs? To help them we are now having language lab. Students should be encouraged to use the facility even beyond the regular classes to improve their communication skills.

Further, you will agree that our role is not only motivating students to learn but also teaching them how to learn and that too in a manner that is relevant, meaningful and memorable. For this, we need not always have a fixed agenda and be rigid in approach; we may be flexible, fluid, experimenting and devoting time which is often invisible to students. Through close observation of students in the process of learning and the collection of frequent feedback on students learning, we can learn much about how students respond to particular teaching approaches. In order to avoid any unhappy surprises on such students' result, we need better ways to monitor learning through out the semester.

In addition, we need to make sure, before proceeding further, at least in the beginning of the semester, that the students understand the topic rather than we just concentrate on covering the course. **Covering the syllabus is undoubtedly important, but no less important is that the students follow what we teach.**

- **Review of textbooks**

A cursory look at the books on science and engineering disciplines, which are being followed by us, will invariably show a significant number of errors/ irrelevant material that have crept in these books. We need to take note of them and point them out to the students.

A heavier responsibility lies on the shoulders of teachers to review before recommending book(s) for a particular course. Teachers could indicate to the students about the errors in the recommended book chapter wise. **Thus, the system of vetting the books, before giving the green signal to students to follow it, is essential.** I strongly feel the need of using SI units (with conversion factor for units of common use) while teaching students.

- **Designing quality questions**

Can the examinations and the questions set therein be designed in such a way that they become the part of learning rather than just a means to evaluate students for their understanding? I strongly believe that this can be achieved; we need to take interest and spend adequate amount of time in developing the tests. **We should prepare ourselves to put up such questions on our website.**

- **Redesigning of experiments**

Think of its importance yourself. To my mind, with the availability of good infrastructure facilities, there should be plenty of scope for innovation and improvement of the existing experiments. I am extremely happy to mention here that the science departments did illustrate this point during the Faculty Development Program for School Teachers organized by us in June 2008.

I can visualize even more chances of **innovation and improvement** in experiments using electrical and mechanical machines and **interfacing certain equipment** to increase their utility in industry.

- **Extension of experimental work to developmental work**

Engineering faculty could think of improving the quality of machines by introducing newer ideas to make them useful for purposes other than being presently used.

Recently, I read in newspapers that students of engineering institution (IITD) developed 'All – Terrain Vehicle' useful to fruit pluckers, 'Convertible Crutch' for disabled persons which could also function as a chair when required. Likewise one can think about developing a variety of useful equipment and modifying the existing ones.

As a chemist, I can think of developing (i) calcium phosphate cements (CPCs) – a new generation of bone cement, useful in orthopaedics and dentistry as repair material for bony/dental defects, (ii) nano size metal chalcogenides of importance in electronic industry etc.

Engineers should be in a better position to think about these ideas. Let us take an example of designing robots. To my mind a team consisting of electrical/ electronics/ computer science/ mechanical engineers can take up such a challenge. Similarly, project on setting up mobile components, making solar energy cells/ rechargeable batteries, etc. may be undertaken. All this may require team work.

It is highly encouraging to note that very recently the Departments of Mechanical and Computer Science & Engineering organized workshops on robotics in collaboration with roboTRIX which

benefited not only our students but also of other institutes of the State. Hobby club/Engineering activity club could be a platform for this. A consorted in this direction is indeed the need of the day.

- **Encouraging students to consult library**

Everyone of us is well familiar with the importance of library. You will agree with me that the shelf-life of knowledge is now-a-days much shorter than what it used to be say a decade ago. And, therefore, continuous upgrading of knowledge for every one of us is very much required. We should encourage our students to consult library for completing tutorial assignments, project work, writing articles on certain topics of current interest etc. In fact, student of higher semesters should be advised to refer handbooks, magazines, journals etc. to upgrade their knowledge.

B. **Our role as an organizer**

- **Institute - Industry interaction through exhibitions**

Our involvement in innovation and improvement of existing machinery, and thereby bringing out certain useful products for exhibition can be a platform of interaction for the industry and the public with the faculty and students of the Institute. By this we may obtain valuable inputs in terms of suggestions and proposals for collaboration. **Our own students may get encouraged to be entrepreneurs in future, thereby achieving the mission of Disha Education Society.**

- **Sustainable multi-disciplinary R & D work**

Sustainable multi-disciplinary R&D work only can produce results which have been the plus point for industrially developed countries to have a lead over developing ones. It should be our moral responsibility to encourage innovation and take up such R&D programs which could give solutions to assist industry with respect to constraints encountered.

Our programs should be problem oriented to attract industry to participate in the institute's activities. For all this, **we have to approach industry** telling them what we can do for the industry and what facilities the institute have to solve their problems in a scheduled time period. The institute is already in the process of bringing out a brochure containing information about the areas of expertise of the faculty members. A R&D cell may be established in near future.

- **Interaction with fellowmen**

It is always beneficial to attend/ organize training courses/ conferences/ workshops etc. to bring new ideas to add to the existing knowledge and to assist in meeting new challenges.

Some of our colleagues in the past have participated in conferences here in India and abroad and some others are going to participate in near future. The management has encouraged them and provided them financial support. Faculty is invited to avail such provisions. We should sincerely plan to **organize training programs/ conferences/ workshops in our institute. Earlier we take steps in this direction, better it will be.**

C. Our role as a researcher

Teaching is indeed an important part of academic institution activities. But no less important is research. Unless the teaching faculty is involved with research as well, the system will become stale and sterile. Research brings fresh air from outside and it vitalizes the teaching. **Teaching and research go hand in hand.** Each provides fresh incentive to the other. In absence of this, students miss the excitement of witnessing new discoveries in their subjects.

It is, therefore, important for us to write some research/ developmental projects for submission to funding agencies. The major funding agencies, e.g., DST, DBT, AICTE, MNES, MES, CSIR etc. entertain applications under the thrust areas beside the other areas for R&D. It is highly encouraging that some research projects sponsored by DRDO, ISRO, CGCOST are already in operation in Science Departments. I hope that more departments will take initiative in this direction.

A word of caution! **NO RESEARCH IS BETTER THAN BAD RESEARCH.**

Good teaching is about doing our best to keep on top of our area of specialization, reading sources – inside and outside of our areas of expertise, and being at the leading edge. Sadly, in our teaching programs, the research element is grossly under-emphasized. A judicious mixture of teaching and research will certainly be useful for both the teachers as well the students. This is how we can experience pleasure and intrinsic rewards.

A new mind set is needed to appreciate the new devices, and use them for upgrading research and teaching quality. Given the changed mind set and a judicious use of technology, **there is no reason why our institute cannot establish its primacy as an educational institute in the Nation.**

Let us take an oath that we all will do the best for the development of this institute as an Institute of National Importance.

- Thank you
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