

## Guest Editorial

**Mr. M. P. Ravindra**  
Advisor – E&R, Infosys Technologies



### Return of the 'role model gurus' to teaching (academic) profession

My entry into the world of education formally happened almost entirely due to Kris who is currently CEO and MD of Infosys Technologies Limited even though I didn't believe that I had the necessary background for it. But he and several other directors believed. Not that the teaching profession was not

at my heart because the first jobs I applied for soon after submitting my thesis were for teaching positions with research. That was indeed my first love thanks to my rub with some of the greatest and inspirational teachers like R Gopalakrishna Iyengar, Prof. K N Srinivasa Rao, Prof. HN, Prof. Satish Dhawan, Prof. Krishna Athreya, Dr. R. Vittal Rao, Prof. Som Krishen who was my eventual thesis supervisor under whose guidance I finished my Ph.D. work and several others and some outside of the institutions where I studied like M A Venkatachar of Vijaya College.

Having been deeply engaged into this wonderful profession informally before and formally in the later part of my professional life has given me certain perspectives which will primarily forms the content of this column. Much has been written about this subject in various columns on the opportunity that is unfolding in front of India and should the country somehow manage to get the raw talent into globally deployable resources the country (business) success is guaranteed. Everyone seems to be concentrating on the student and little is discussed on the role of teachers and resources engaged in running education in the country. It is dismissed after arm chair philosophizing as incorrigible and with scant respect. On teacher's day a few sympathetic noises are made on this noble profession and conveniently forgotten about.

What I am saying may sound controversial but I will fail in my duty if I don't say what I think is critical for revival of this truly important role a teacher has in society especially a society that is going to be increasingly dependent on knowledge as a tradable commodity; it is another matter whether it can be found in a large majority of teachers in the engineering colleges today. Any ailment here needs immediate correction and not dismissal.

I like to propose a national or at least state wide debate as to what has caused the current impasse and point to where the solution possibly lies.

The perception of what the role of a teacher in shaping the future citizens of a society just 30 to 40 years ago was very different. I was amongst close to 30 to 40 research students in IISc between the Physics and Mathematics departments. Of course not everything was rosy but there was enough respect we had for our professors for their scholarship and genuine interest in science and they loved and respected their profession bordering on arrogance. This made most of us consider that teaching and research as a first choice career alternative seriously. Most have taken to the profession! This was so because our teachers were soft selling the profession to us without any pressure. Of course I must submit here that the anomalies in salary between the teaching career and other alternatives were insignificant and if anything better on the teaching side.

Some characteristics demonstrated by these people in common is very necessary to be enumerated here. All of these people were committed to see that we understood the purpose why we were in the 'school' and helped us learn the subject really well. All of them showed it in various ways and it is hard to recount all of them in a short article. But to know that they always had time for their students, no question was trivial for them, they were always open to look at things differently from what was their knowledge, most of all love for their students always egged us to work hard. At different stages the classes were 100 to 110 students and yet we were made to feel part of the learning.

One extreme case of the commitment by my thesis supervisor Prof. Som Krishan comes out from the incident I narrate now. I had submitted my thesis and sent a paper based on my work to Physical Review Letters a leading Physics journal. Within a fortnight we got comments from the reviewers that one of the theorems I had assumed needed a proof. It was an important one for my thesis to be approved. I had reason to be concerned and was stuck to my perch in the library for close to 72 hours excepting for natural breaks. On the third day morning I found the proof and went to the department to leave the papers and then go for some rest to the hostel. I found my Guides room wide open with lights and fan on. It was 6 am and wondered what was wrong. I went into the room and could not find any one. As I stood there I saw my guides boots jut out from under the table and was shocked. I called out Som two to three times. He woke up with a start and immediately jumped up and said he had derived the proof as well and started explaining.

I told him that I had also found the answer. I was in tears because it is really hard to find this level of commitment from any one. There it was proof of the type of commitment my teachers had for truth. Our paper got accepted in the Physical Review Letters which in itself was a great high for us. I can go on and on.

Against this backdrop let us review what is happening today to the teacher both within and outside the college (system.) and what possibly needs to happen:

1. Most people who are teaching engineering subjects especially in the relatively young discipline of Computer Science and Information technology are folks who are waiting to join the industry or go for higher studies. There are migrants into this area from other branches in large numbers.
2. Most colleges are in the private sector started by people who have made their money in trade and other businesses and lack the understanding or appreciation needed for education excellence. How this affects the quality of education is subject for another article and I would reserve it for a later time.
3. There are serious accountability issues. This needs attention from concerned people. We as educators are responsible for the students and their parents and society at large. Unfortunately, the reasons offered are seen as excuses offered by folks who are not willing to solve the problem due to our own deficiencies. This is untenable.
4. The silent anger of the senior professionals reflect in the atmosphere when they meet others and younger students; cynicism in high concentration is passed on in heavy dosage to younger folks and deter them from considering the profession even if they love to. There are many examples where youngsters enamored by their capable gurus have been told that it is foolish to take it up by principals of colleges who are woefully understaffed. What this tells us is that they themselves don't respect the profession they have chosen due to several factors; unfortunately they fail to recognize that the choices they have made but rationalized in the name of practical wisdom. This needs to change? Being an academic to me is ultimate in the capability for self introspection to understand oneself and then mastering a subject!
5. It is well known that if we don't respect ourselves then no one else will. This requires separation from funding group and governance of educational institutions even if it is run for profit. But in matters of meritocracy and pay for work and differentiating between ordinary and extra ordinary will become critical. Isn't it time that we as educators take pride in our profession, admit the deficiencies imposed on us due to various factors and continuously improve with a sense of urgency? Only then can we "command" respect. Unfortunately respect is not a commodity that we can demand for any price!
6. Transparency and external benchmarking of what happens in a college has to be embraced as a best practice and data based decision making will yield results in matter of years.
7. Teaching does not come to everyone naturally but certainly trainable if one has genuine interest. It is essentially a life experience for me. We as a team had the same issues like any other college experiences. We in Infosys face internal competition between learning units and business units. We have been forced to take persons who had a passion for teaching but may be from different subjects and discipline than the focus of the company and not always the best and brightest but who were committed to learning and teaching and make them very capable educators and several of them researchers through mentoring. It is therefore my belief that it is eminently possible for colleges and the larger education system to do similarly if the willingness to make it happen is there on part of senior faculty and perceptive management.
8. Lastly, scaling poses problems but under the circumstances prevalent in the country the better colleges and institutions have to be allowed to scale and create multiple campuses if necessary. It may also be necessary to treat the entire system as a supply chain problem with suitable interface and exchange mechanisms that ensures better deployment of talent appropriately. There are very good frameworks available in the Malcolm Baldrige Education definition which can be adopted and then adapted to our conditions.

I conclude by saying that we have to control our destiny or some somebody else will as Mr. Jack Welch of GE said. Academic professionals owe it to society to be in charge of Education for the good of society.

Please invite yourself to return to the glory that teachers deserve. Journey is ours and ours only.

**M. P. Ravindra**  
**[Ravindra mp@infosys.com](mailto:mp@infosys.com)**

Disclaimer: The opinions expressed here are personal views of the author and in no way Infosys' views.

## From Chairman's Desk



Over the past several years, there has been unprecedented and unplanned expansion in the higher education sector, especially the technical education sector. Some of the stated and implied reasons have more to do with the supply side than with the demand side – the number of school leavers aspiring to study engineering has been increasing substantially; unemployed engineers have a better chance to become entrepreneurs ... However, in order to create and sustain Quality, without which the output from the system will be more of a liability than an asset, a great deal of planning is a dire necessity.

Let us look at the conditions under which expansion of admission capacity may be justified:

### I Input Side

- Number of candidates crossing the eligibility threshold in the relevant competitive exams – JEE, AIEEE, State CETs... considerably greater than the existing intake capacity.
- Number of seats remaining unfilled in previous years is an indication of whether expansion is justified

### II Output Side

1. Industry projections for manpower requirements greater than the number of graduates produced.

This condition must be considered in the light of several factors:

- discipline/sector-wise requirements
  - the proportion of graduates found employable – through filters, such as tests, interviews, etc.
  - entry-level recruitment vs. lateral entry attrition levels
  - inter-state migration of graduates
2. Considerable demand for post-graduate education – MTech., MBA, ...

Some of the constraints confronting us are:

- Severe faculty shortages, leading to unfavorable faculty : student ratios
- Locational disadvantages
- Infrastructure deficiencies
- Internal brain-drain
- Lack of planning – leading to continual operation under crisis management / fire-fighting mode
- Maintenance of Quality

There are three strategies for enhancing admission capacity, each with its implications and pros and cons:

- i. Increasing the number of institutions: Additional investment, infrastructure, requirement of scarce faculty; gestation period for achieving steady state operation.
- ii. Increasing the admission capacity in existing institutions: Relatively smaller investment required for the requisite human, physical and financial resources than case (i)
- iii. Second shifts in existing institutions: Unless extra faculty and staff are employed, extra load on existing faculty and staff; teaching will be the only activity in these institutions – no academic or sponsored research, consultancy, continuing education, etc.

Some of the other important factors which need to be taken into consideration are:

<ul style="list-style-type: none"><li>• Scaling-up</li><li>• Sustainability</li><li>• Quality and Excellence</li><li>• Globalization</li><li>• Student Learning</li></ul>	<ul style="list-style-type: none"><li>• Employability</li><li>• Teacher Quality</li><li>• Technology as Enabler</li><li>• Academic Leadership</li><li>• Insulation from political pressures</li></ul>
---	---

Prof. R. Natarajan

## Seminar On Technology in Engineering Education

**Venue:** PES Institute of Technology  
**Date:** October 4, 2008  
**Sponsor:** BITES  
**Host:** PES Institute of Technology



BITES organized this workshop to make faculty members aware of the technological innovations, products and services available in the area of E-learning, Knowledge Management, Content Creation, Learning Management and Online Assessment Systems.

Prof. R. Natarajan, Chairman, BITES in his welcome address noted that technological innovations in E-learning and Knowledge Management are impacting the teaching learning process and exhorted the faculty members to adopt these innovative technologies in their curriculum delivery.

Prof. S.S Prabhu, Prof. IIITB in his key note address traced the problems that have arisen due to exponential increase in the number of Engineering Institutions; especially the shortage of qualified and trained faculty members and the lack of high quality research commensurate with the growth. He opined that problems could be effectively addressed by adopting a student centric model with a combination of **Personalized Learning systems** and **Cooperative Learning**. Institutions should use Web-based CMS / for content delivery, assignments, self-tests, group activity, discussion forums, FAQ's, etc. He also strongly stressed the need for a National initiative for developing large, open-source library of Reusable Learning Objects (with metadata created as per standards: IEEE LTSC, IMS, Dublin Core, SCORM) for learning module creation

Prof. S. Ramani, Prof. IIITB gave examples of many initiatives like MIT OCW, NPTEL, OCW consortium etc. which have developed excellent web based courseware that are available over the Internet for free. He cited some of the practical challenges that need to be addressed by the institutions while accessing the content and outlined the design of a cost effective Digital Library Setup that could be used by the colleges. He favored the idea of remote access and learn any where any time concept that could bring significant dividends to both students and Institutions.

Meena Ganesh, CEO and Dr. Aravind, Director from EDURITE made a presentation about the innovative E-learning products like **DigitAlly** and **Tutorvista** which can be used by faculty members for the development of Learning Objects. They also gave the salient features of a product that has been specially designed to enhance English language speaking skills among engineering students

Aparna and Saiful Amin from EDtech made a presentation on some of the KM products like **Blackboard** which is a combination of LMS and CMS that can help in creation and delivery of SCORM compatible content; **Question Mark** for Online assessments and **TEGRITY** for the automatic capture of class room content and conversion of the same to a SCORM compatible learning object.

Dr. Yogesh Kumar Bhat, Associate VP, Infosys shared the Infosys experience of creating a KM environment for employee training. He discussed the challenges faced by Infosys in creating a global, scalable, flexible and measurable online learning environment for the competency management at Infosys. The existing competency development program at Infosys covers about 400 roles spanning 15 business units. A total of five certification levels exist starting from Foundation (T100) to Thought Leadership (T500)

The seminar concluded with a vote of thanks by Prof. KNB Murthy, Principal, PESIT.