

PERSPECTIVES

Excellence in Education and R&D: Some Personal Thoughts¹

Deepak Pental

I believe I am a mediocre who does not like the culture of mediocrity. I want to see excellence and struggle for it. I think this country with its history of subjugation and feudal hierarchical system requires success stories which are built on hard work and fair play. Success stories lift the morale of the country and we are all concerned that the morale of the country should not go down.

India is a complex country. There is hardly any country in the world which has such cultural and linguistic diversity. It is a miracle that this country has survived. All those analysts and opinion makers who speak nice words about India today, many of their brethren in the west had written off this country as a basket case, as a country that cannot win.

Sprinters and Marathon Runners

Management graduates are sprinters. One has to be flashy, quick decision maker, nimble footed and, above all, have the ability to win in short term. My favourites are marathon runners, as I come from the world of research on crop plants where a single breeding cycle is of 6 to 7 years duration. I find that in this country, where so much of science and technology is required, the best of the minds are not interested in it, as it takes too long a period to attain recognition. Today we feel that the best jobs are in the managerial roles, where you operate things and take decisions, although the complexities and requirements of nimble footedness have changed. The old system of bureaucracy particularly in the public sector is too conservative and maintains the status quo

whereas the new one, at least in the private domain, operates in a more competitive mode. On this I am speaking from a distance. I have never worked in the corporate sector. My world is that of a university, as a researcher who starts some work in R&D and hopes that something would be achieved. It is every researcher's desire, like any other human being, to have visibility and recognition no matter where he/she works.

Challenges Facing Researchers

Let me tell you that the Indian science bureaucracy that we have is even worse than the IAS and IPS bureaucracy. When I wanted to return to India, head of a few institutes asked me why I want to return. This was very insulting. It was a big opening for me when Tata Energy Research Institute (TERI) offered me a job because none of the established institutes were prepared to use my knowledge in the area of genetic engineering of crop plants that was just developing at that point of time. To give you an example of science bureaucracy dragging its feet, the decision to bring dwarf wheat into India was not a decision of the science bureaucracy. It was the decision of Mr. C. Subramaniam, union agriculture minister in the 60s and his government. He realized that we are in a pitiful condition in this country in terms of food availability and we need to access the best technology available globally. Scientists might have basked in the glory of the green revolution later on but the knowledgeable people know the true events.

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At TERI we started with great enthusiasm. We converted a rented house into a laboratory, where we did some quality work. This taught me that one can do research in India, if somebody backs you up. As we went along, I felt that if we could work on a crop like oilseed mustard that is an India specific crop grown in 6 million hectares of land, by bringing in the latest technology, we could be self-sufficient in edible oils. As TERI was ready to support us, we started a programme on breeding for developing hybrids in mustard. In many crops hybrids have been found to be more productive than the pure-lines. Hybrid corn that was developed and grown in the US led to very high yields and wealth creation in that Country.

Examples available at the global level clearly show that one has to invest in a focused way in science and technology, if one wants to win. Sadly, India's policy is one of remaining alive. In science and technology, barring a few areas like space, we are neither dead nor running. We have chosen a policy of breakeven. We produce good students and export them. Indian engineers have earned quite a name in the Silicon Valley and in the US technology schools. So the learning they did in India served the American economy much more than the Indian economy. At Delhi University, we produced six bright students in the last academic year in the Genetics department. All six of them got fellowships to go abroad. So the Indian talent is going to be grabbed by the developed countries, as they don't want to lose their head start in science and technology. If they lose that to the developing world, what will they be left with? There is nothing to bank upon to create future wealth for their countries.

In TERI I could not get what I wanted due to lack of funding. The initial support started dying out. So I moved to an assured environment of a university. I had spent most of my life time in the universities. Let me inform you that

universities are the most neglected institutions of India. Positions like vice-chancellor are often filled through patronage, particularly in the State Universities, rather than on the basis of ability and academic credentials.

Universities and Research

When I joined University of Delhi, South Campus in 1984 the buildings that were meant for housing Life Sciences Departments were lying incomplete for the last 14 years. Three contractors had changed but the task was still incomplete. I thought this was the end of any research carrier. I had a project from the Department of Biotechnology, but the funding was too little for a full-fledged breeding programme. After deep thinking, I submitted a project on mustard breeding to the National Dairy Development Board (NDDB), as NDDB was involved in the edible oil self-sufficiency mission. So when I went to Anand, I showed the work on hybrid mustard to the then chairman of NDDB, Dr. V. Kurian. I informed him that when east European mustards are crossed with Indian mustards, the yield increased by about 20-30%. This was found in our earlier work at TERI. Dr. Kurian, always a risk taker for a good cause, granted me a project of Rs. 5 crore. Unlike our scientific bureaucracy which tends to underfund projects, we got reasonable funding to start a long term breeding programme. When I went to Delhi University Registrar to import chemicals for the project, he declined to sign, asking what I would do with so many chemicals. I realized why people in the University are unable to do good experimental research. Nobody supports experimental science properly in the universities as the shape of things in a premier university like the University of Delhi showed. But we persisted with our research dreams and achieved reasonable breakthroughs in our R&D work. Persistence pays.

Bringing about the Changes

My predecessor and I struggled to get adequate funding from the UGC to improve the state of buildings at the University of Delhi. Today everyone appreciates the buildings that were repaired through external funding and have been maintained well. A few years back, the Vice Chancellor's office, otherwise a heritage building, was one of the most horrible-looking buildings in the University. With the efforts of my predecessor the building got a new look and facilities that everyone appreciates. There was a horrific state of affairs even in courses and curricula. The University was granting BA (Pass) degrees following the British period when those who failed in BA (Hons) courses were given a BA (Pass) degree; this had to be changed. So BA (Pass) was converted to BA programme. There was a whole catalogue of sins, the biggest being lack of desire to change course content. Besides, the inability to evolve, universities also suffer from vacuous politics since the 1970s. Due to political turmoil in the 70s, our universities became hot beds of petty politics. As a consequence, the central government started funding small institutions for R&D and professional education. As an example the student intake at IIM Indore is almost the same as that at FMS, University of Delhi. But the University has so many other subjects and courses in a mode which is followed by the universities all over the world.

In the past couple of years the government has woken up to the plight of Universities and realized the importance of providing reasonable grants to the universities and educational institutions. So three years back we got our first extra grant of Rs. 35 crores which we used to

buy equipment and computers for undergraduate students so as to improve the standards of undergraduate education.

When the OBC oversight committee met, I told the chairman of the committee Mr. Veerapa Moily, that time has come when per capita expenditure on students should be considered as a method for funding the Universities. He agreed. Unfortunately, due to our feudal mindsets, UGC and HRD like any other government organization want institutes to run after them like beggars for improving the Universities.

Need of Marathon Runners

Coming back to research interests of my laboratory, we have developed high yielding hybrids and changed the quality of mustard, making the quality of oil superior to even that of olive oil. This encourages me to say that once we put our minds into creative places, a kind of excellence can be created and mediocrity can be kept at bay. Removing the mindset of mediocrity will also require the mentality of a marathon runner. It will take time to defeat the mindsets of mediocrity. Excellence in science and technology cannot be achieved in the short run even after required reforms have been made.

We need vision, dedication and a long term perspective and universities should take a lead role in science and technology and R&D. Finally, marathon runners are as important as sprinters.

Author's Profile

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