

## The myth of falling standards: a lifelong counter-experience

A search for the words 'The myth of falling standards' on Google turned up 39,000,000 results in 0.4 seconds on 5 April 2014. Even without such data, it should be obvious to any discerning observer as (s)he grows old that the elders have always maintained and are convinced that the standards have fallen since 'their time'. Earlier this year, as I was walking in the beautiful Indian Institute of Science (IISc) campus, I overheard a conversation unwittingly. An old retired professor was telling a young colleague 'You know, it is not like in our time, the standard of students we get these days is rather poor.' If you look at any measure of progress, it would not be difficult to see that the retired professor had no interest in the truth.

This conversation reminded me of my own with one of my teachers while in college. He had told us: 'You students are not studying enough; the quality has gone down. You are wasting too much time on watching and discussing movies.' I always had admiration for that teacher and understood that he wanted us to do well. I could not, though, stop watching or discussing movies. Twelve years later, I visited my college. By then I had obtained my M Sc (IIT Madras) and M Tech (IIT Delhi) degrees and completed my Ph D and postdoc in USA. I had returned to India to take up a faculty position at IIT Kanpur. My teacher was very pleased that I visited and we were discussing my studies and work. He then told me: 'The quality of students we get these days is not as good as it was when you were a student here.' I have not learned politeness much in my life and I replied: 'But, this is not what you told us when we were students. You did not like our quality at that time.' I still have a lot of admiration for my teacher and make it a point to meet with him whenever and wherever possible, as he showed us the way.

When doing my postdoc in USA, my adviser told me once: 'You know, the world was a great place when I was young during the 1950s and 60s. Starting from the 70s, it has not been the same.' I replied, 'But that is exactly the decade I loved most. The world was a great place and we enjoyed life.' He knew enough and shrugged his shoulders. When one is young and parents and teachers take care of your burden, the world is a great place for most. Of course, we do have less fortunate children who would experience a different world at the same time.

Recently, IISc decided to stop its own entrance exams and joined the national exams for admission to its integrated Ph D (JAM) and regular Ph D (CSIR/UGC NET and GATE) programmes. As someone who had supported this initiative to join the IITs in conducting JAM, I called some friends in IITs to share the good news. One faculty from an IIT which used to attract top students in the entrance exams complained: 'The standard of students coming from JAM has deteriorated.' The fact, however, is that another IIT is attracting the top students these days. In a meeting related to these entrance examinations, a Director mentioned: 'I have personally seen that the comprehension of students has gone down in recent times.' I doubt if the youth of today comprehend less than the youth of any previous generation. Talking to my teenage daughters and their classmates provides strong evidence to the contrary. In fact, in the past, our elders, whether in families or institutions, were unwilling to let the youth explore and often clipped their wings. It is certainly changing for the better today.

Sometime ago a search committee was constituted to appoint a Director for the reputed Tata Institute of Fundamental Research, Mumbai. It chose someone from abroad. The committee did not mention that an international search was carried out and the best person chosen. Instead comments like 'we went through the list of fellows and awardees in India high and dry, none could be found', were made. The contradiction is astounding, as these eminent people would have been largely responsible for selecting the awardees and fellows. That scholarship and leadership need not go together was altogether missed by this committee. How can an *h*-index prove leadership qualities? None of the comments made by those in the selection committee made any sense to me, though they made it to a news story in *Science* at that time. The previous editor of this journal was the only one who made a comment that made sense to me. 'It is inconceivable that in a country like India, they could not find someone suitable.' He went on to write one of his forcible editorials with the title 'Requiem for a missing generation' (*Curr. Sci.*, 2002, **83**, 1297–1298). Often those on the verge of retirement conclude that no one suitable could be found to replace him/her for obvious reasons.

Tamil Nadu was the first state to introduce reservation in education, with the objective of ensuring a level playing field. When I was a student, I heard from some that reservation has affected the standards and that the quality of students has gone down. As my daughter applied for admission to medical colleges in Tamil Nadu on open merit recently, I had a chance to closely follow the admission process there. The cut-off marks for various categories starting from general merit (OC) to the socially most deprived (ST) at the top-ranked Madras Medical College ranged from 200 to 199.75 (out of 200) ([http://www.indiacollegefinder.org/courses/medicine/TNMA/government\\_college\\_cutoff.php](http://www.indiacollegefinder.org/courses/medicine/TNMA/government_college_cutoff.php)). Thiruvavoor Medical College had the lowest cut-offs, ranging from 198.0 to 192.75. In April 2014, I visited Lawrence Faulkner, a doctor in Florence, Italy. He is the Chief Medical Team Coordinator of 'Cure2children', an NGO dedicated to providing healthcare to poor children and has travelled extensively in India. We were discussing the national scene in India. He made a casual comment based on his observations that overall progress of Tamil Nadu is better than that in Gujarat.

I heard from a colleague about the perception in some circles that the standards in IISc are going down. How was this conclusion arrived at? Fraction of papers published from IISc in comparison to the total number of papers published from India is going down. Should this not be a matter of pride? India has invested heavily in higher education and recently set up a large number of new IITs, IISERs and Central Universities. Thanks to the economic growth witnessed in the last two decades, generous funding has been made available to more colleges, universities, private and public, and the number of active researchers is increasing. Many of these new institutes have helped Ph Ds from IISc to secure good academic positions. Naturally, the fractional contribution from IISc should come down. Despite this, I contend that IISc today is growing and doing better than the past. Today, IISc has more Presidents of international science organizations (67-year-old International Union of Crystallography and the recently established International Shockwave Institute, for example), more editorial board members in internationally reputed journals, more fellows in international societies and academies, etc. The IISERs are beginning to make an impact; the old IITs maintain their brand name and the new IITs are catching up. It would be important for the new Central Universities to succeed as well, and I hope they do. Central Universities are more appealing than the IISERs with a limited focus and one hopes that all these institutions broaden their horizons with time.

All indicators point to the overall growth of science, not just in IISc, but in India. In chemistry, I can mention

some facts. The Royal Society of Chemistry has sent a permanent senior editor, Philip Earis, to be stationed in India last year. Our country is now the third largest contributor to the Royal Society journals. A. Maureen Rouhi, editor of *Chemical and Engineering News* published by the American Chemical Society, recently stepped down moving to 'make a physical presence in India'. In her last editorial, she points out that 'Submissions to ACS journals from India, South Korea and China grew at annual compounded rates of 17.3%, 16.6% and 14.7% respectively, compared with 5.4% from the US, during 2008–12' (*Chem. Eng. News*, 31 March 2004, **92**(13), 3). Faraday Discussion meeting is coming to Bangalore in 2015, the first time in India. The *Journal of Chemical Sciences* published by the Indian Academy of Sciences has decided to become a monthly journal from 2015, doubling the number of issues per year. Submissions to this journal have increased from 219 in 2007 to 1027 in 2013. How would all this be possible if the standard of students is going down? From my personal experience, I will shout from the rooftop: 'The standard of students is going up'. India could not have achieved what it has in the last decade without the standard of students going up. Could India, science in India, and IISc do better? Clearly, yes. And, I have faith in the coming generation that we will do even better.

It is true that the state Universities have fallen behind compared to the past. This is due to various factors and certainly cannot be solely blamed on the quality of students. In addition to setting up new institutions, one hopes that the political and science leadership will take steps to improve all the state Universities. When that happens, India can truly become a formidable force in science education and research. A few institutions of excellence are far from adequate for a country like India.

I have mentioned only a few facts that I am personally aware of and I have no intention of highlighting some achievements and leaving out others. The standards do not fall with time, not from the time of *Vedas* or from the time of the Romans. India and the world do go through ups and downs in every sphere of life and that is the law of nature. Empires have fallen and will continue to fall. The world moves on with rising standards and rising aspirations of the masses.

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