

## India's faltering education system

By Kaushik Basu  
Professor of economics, Cornell University

### **On the one hand, India's higher education system is widely acclaimed.**

With Indian managers and consultants crowding investment banks, Indian computer scientists sighted in Silicon Valley with the abundance of wild beasts in an African safari and IIT-trained engineers not only working all over the world but appearing in Dilbert cartoons, there seems to be good reason for this.

Yet, over these last two months that I spent in India I came across repeated warnings from prominent personalities associated with Indian academe.

For instance, the scientist CNR Rao, the sociologist Andre Beteille and, most recently in a lecture in Calcutta, Mr Narayana Murthy of Infosys, who is also chairman of the board of directors of the Indian Institute of Management, Ahmedabad, have all warned about India's faltering higher education system.

How do we reconcile these diverse points of view?

### **Moribund universities**

As soon as one ferrets through some of the statistics of higher education, the answer becomes evident.

India's production of professionals is phenomenal. With over 300 universities and 15,600 colleges spewing out 2.5 million graduates each year, in terms of the volume of production India trails behind only the US and recently China.

**A recent evaluation of universities and research institutes all over the world... has not a single Indian university in the world's top 300**

Each year India produces 350,000 engineers, twice the number produced by the US.

The IIT's are indeed world-class training institutes, as are the IIMs; and in recent years the new law schools are also beginning to produce first-rate lawyers.

What is, however, equally true is that, in terms of research and the purely academic disciplines, such as mathematics, physics and literature, India is beginning to trail in comparison not just to other countries but its own performance.

The Indian universities, once alive with the hum of intellectual activity, are increasingly moribund.

This is worrying.

The benefits of good professional training are for all to see. What is less visible but, in the long run, just as important are the academic disciplines, like mathematics and the arts, which are meant to be taught and nurtured in the universities.

### **Tradition bound**

These shape a citizenry's mind, fertilise a nation's intellect and provide the milieu out of which emerge the engineer, the lawyer and the computer technician. If India is to be a global economic powerhouse it

is essential to nurture this pure knowledge sector.

A recent evaluation of universities and research institutes all over the world, conducted by a Shanghai university, has not a single Indian university in the world's top 300 - China has six.

The Indian Institute of Science, Bangalore, comes in somewhere in the top 400 and IIT, Kharagpur, makes an appearance after that.

Given that India was once home to frontline research - Ronald Ross, CV Raman and Satyen Bose easily come to mind - and even a few decades ago the Delhi School of Economics, with Amartya Sen and Jagdish Bhagwati doing cutting-edge research, was routinely compared to the best departments in the world, how have we come to this pass?

It may at first seem hard to imagine what the answer could be, since our universities function pretty much the way they did in their heydays.

But therein lies the answer.

The organisation of international academe has changed, whereas the Indian university has remained tradition-bound.

There are many things that need to be done.

We need today the kind of initiative that led to the founding of the IITs and to remove the bureaucratic stumbling blocks for the infusion of private funding into the universities.

### **Pockets of excellence**

Minimally, we need to break away from the mindset of having one uniform standard for all.

When India had a few universities treating them all alike, with the same travel and research funding, same salary and the same autonomy (or lack thereof) was fine. But in today's India to tie all universities to the same level of support and rules is to commit them all to mediocrity.

With universities in research-active nations, including China, switching over to the "star system" - where for leading academics salaries and research funding are allowed to rise to match productivity - there is no choice for India.

Our government has to allow pockets of excellence to emerge and to allow them to bid for the best researchers.

Most current academics will tell you that the salary was of little consequence in their choice of career.

I think they are right. But to survey only the ones who have chosen to be academics is to miss out on people who are sensitive to salary and therefore did not choose to be academics.

To attract some of the best minds to fundamental research, especially with top corporate salaries on the rise, we have to permit research funding to match a scholar's productivity.

A professor at a top research institute told how they recently hired a talented PhD, who was earning a big salary in a leading IT company and was giving that up to earn the standard 14,000 rupees (\$305) per month for a starting academic.

This is roughly what a senior call centre worker earns.

The dedication of this particular person, like that of many current academics, is remarkable; but to rely entirely on such dedicated people to build a dynamic knowledge sector is to court failure.

### **Here is a selection of your views on Kaushik Basu's column.**

Indian education system is not driven by the institutes, you will have people coming out of shabby colleges but they excel in international careers the reason being hard work being put by average Indian in work place. The amount of work a Indian employee puts in initial years of his/her career are much more then any country which compensate for the gaps in educational system. The article is correct but to a larger scale it does not reflect performance of Indian professional.

**Ashish Shukla, London, UK**

Good article. The author missed out on one point. It is so disheartening and depressing to see the caste and religion being dragged into every inch of educational system. For people in India, it is demotivating. Also, why so much reliance on IITs and IIMs? It is the very Indian mentality that the system is crippled. Like we rely on Sachin Tendulkar in cricket, we rely on these institutions. Before giving them so much credit, one should think how much money and political will is being pumped into these institutions compared to ordinary universities. Give the same attention to many other universities and IITs and IIMs will become a thing of past.

**DM, India**

A very good article. But having done my complete studies in India including higher studies, I feel the failure could also be attributed to lack of quality teaching of basic science right from school. Not many teachers talk of the philosophy of science.

**Vidhya Jagannathan, India**

I think in addition to the comments of Mr Basu, my recent visit to India highlighted yet another and in my opinion a more worrying trend, reservation of seats in high education for backward castes. This reservation system is nothing short of a blatant populist measure aimed at the vote banks with scant regard to the talent and indeed desire to develop high class talent in India. In the long run, India (with such populist measures) will lose further ground in producing talent and encourage mediocrity. Alarmingly, the Ministry concerned actually made a statement dismissing "merit" as a criteria for entering top universities. I see more brain drain from India and yes, a lot of growth in the "dumb" call centre sector. Well done, India.

**Murli, UK/India**

I am a final year student at IIT Kharagpur . The reasons about the declining number of students who are pursuing research after under graduation can be attributed to the following factors: 1) A job in India for IITians could easily fetch a starting salary of 400,000 rupees plus . However , If one opts to work as a research assistant , or go for PhD , then the stipend one gets is very less . It's like 10,000 rupees per month , whereas if a student goes to US to pursue higher education(read MS/PhD) , he gets \$1800 in hand (after taxes) per month . 2) Dearth of quality professors in India . I think the reason for this is the low salary for the professors . At 25,000 rupees (\$600) per month , one cant lead a life anywhere near to the kind of lifestyle a highly qualified and brilliant person would like to have . These people would better go abroad and join the US universities , where they get a much better deal. 3) Lack of proper infrastructure: Despite the fact that IITs have produced some great minds , the fact remains that it has to do with the tough entrance procedure . The faculty and infrastructure inside is quite modest by any international standards . There's shortage of water , lavatories stink , mess food is a mess altogether and surroundings are not much hygienic . Why would one like to stay if in every regard the option of doing MS from USA seems a more viable and better option?

**Pushkar Prasad, India**

I completely agree with what Prof Basu has to say. Whilst I was at university, there where a number of students that had come to study there from India. None of these students opted for pure subjects - instead always opting for the likes of Business/management courses or else computer science/systems engineering. Whilst having good employability skills is important, it is equally as necessary to have a quorum of pure academics. I believe it is up to the government and the high net-worth individuals like Mr Narayana Murthy to increase awareness and funding in these areas. We already have so many MBA's and software engineers - how about some Nobel prize winners in physics/economics/literature...?

**Akshit, India**

Mr Basu is correct in pointing out that the rigidity of Indian academic institutions are to be blamed for the deterioration of standards. However, the increasingly bureaucratic nature of universities, as well as the drain of the brightest students to the US after school in India is also to blame. I can't believe, however, that the IITs and IIMs are not in the top 300 - I would like to see the basis of such a study before I can take that as a credible result, since the graduates from these institutions are more sought after in their professional fields than graduates from Oxford or Cambridge.

**Rustam Roy, London, UK**

The IITs were ranked third-best worldwide for technology, after MIT and the University of California Berkeley and 50th best overall university (Source: The Times Higher Education Supplement (2005). Also check [http://en.wikipedia.org/wiki/Indian\\_Institutes\\_of\\_Technology](http://en.wikipedia.org/wiki/Indian_Institutes_of_Technology) and <http://www.thes.co.uk/>. So are the comments here justified?

**Vinod, India**

The degeneration story is partly true and India's less than 2% contribution to world research is the

reason for low ranking, but it has quite a few world class teaching institutions and recent private sectors players who emphasise quality. The only shortcoming is research.

***Dayal, Malaysia***

Reading Mr Basu's article makes clear why Cornell is not among top 50 universities of Arts and Humanities (where Mr. Basu is a professor) in world, where as Calcutta University, India has 39th place according to Times Higher Education Supplement (2005) (link: <http://www.epfl.ch/soc/etudes/pdf/world-rankings05.pdf>). When somebody chooses to follow one of the least known surveys just to support his/her claims, we, people of science describe him/her as a person mollifying the evidence. Times Higher Education Supplement's university ranking is considered as pretty authentic. According to the survey, Indian Institutes of Technology (IITs) get 50th rank among overall Universities, 3rd rank (after MIT and Berkeley) in technology, 36th place in science. IISc, which is not an university but a research institute is ranked higher than IITs in research in India has not been considered in the Times' survey (because by definition it is not a university). With his limited knowledge of Indian science, Mr Basu could name only two economists (one of whom was his PhD advisor !) as the cutting edge researchers from India, he fails to make any comment about several scientists like Ashok Sen, Ramachandran etc etc who have made very important contribution to the world of science working from India. After independence, India had to answer several problems and ofcourse funding for science and research was not high till recent period of economic boom. Recently after the steady economic development even several less known research institutes of India have been found to thrive fast, for an eg. NCBS, a not so well known research place with 15 research groups has published 60 research papers including 18 in high impact journals like Nature and Cell in 2004, according to Nature, July 28th, 2005 edition's Outlook. This is an impressive record for any research institute any where in the world. Mr Basu claimed that somebody has joined academia for only Rs 14000 (\$305) per month salary ! I am quite surprised with this comment. In India, now grad students in science get a salary of ~ Rs 10000 - 11000 (\$250) per month ! I don't have any evidence saying the exact salary of starting academics, but as far I know, it starts from Rs 35000 (\$830) per month at research institutes. In India a salary of Rs.50000 (\$1130)per month is equivalent or better than \$100,000 pa in USA. So, on the whole, I think Mr. Basu's article is unsubstantial and biased. Hope in future, respected news sources like BBC will be more serious in selecting guest columnists.

***Dipankar, New Haven, USA***

There is a curious straitjacket in the Indian education system- that good studnets study engineering and medicine and mediocre students study commerce. Therefore, the cream of the students is forced to study mechanical subjects with little emphasis on original research. Few have the patience to study classical sciences, since all are after quick money. The poorest of the students are forced to study humanities and social sciences, and it is fruitless to expect them to come up with cutting-edge research. No wonder most of the top Indian academics, including Kaushik Basu, are based overseas.

***Aruni Mukherjee, India***

Brilliant people like Mr. Basu should go to serve mother India instead of enjoying life in the West and lecturing about their own homeland. America has already too many brainy people, but India needs her genius to put order in the lawless and grossly inequitous society. Is it asking too much?

***Neil Bee, USA***

There are two ways to think about plugging brain drain in academia -- the article proposes offering greater financial incentives for scholars by tapping into the private sector. But isn't it naive to imagine that private research funding will rush in to support pure science research or the arts? As the article points out, an alternative way to retain talent is by tapping into the idealism of "dedicated" individuals who choose to work in academics in India despite more lucrative opportunities in the private sector or abroad. I don't see why this method shouldn't be encouraged or relied upon; why make the default assumption that young Indian academics would uniformly be unable to resist the allure of an easy life in the private sector or abroad? Many of the brightest have shown and will continue to show the good taste and sense of duty to stay back and do something meaningful with their lives. There isn't a market solution for everything, Mr Basu -- and perhaps we could persuade you to return to the Delhi School of Economics?

***Vandana Gaurishankar, India***

After graduating from a US university with a Masters degree and having interacted with graduates coming out of India, I can say for sure that the quality of Indian fresh graduate engineers is a big concern.

***Narayan, USA***

I obtained my undergrad degree at Delhi University (DU). This degree is not even worth the paper it is

printed on. In the 3 years I spent there - learning by rote was the norm and the professors dictated notes from fraying yellow pages. There was a apt joke to describe the situation - A student is sitting idly in class while the others are furiously jotting down his words. The prof asks him why he was not taking any notes - the student replies "But I already have them from my grandfather". The state of education is just pathetic and we are talking of Delhi University - not some remote non-descript entity. Fast forward to the US - One cannot even compare my PhD studies here to the sad nonsense that passed for undergrad in Delhi University. While I was in the lower third of my class in Delhi University, it was at the top of my class during PhD in US. If I ultimately did well in life - it was because of my own intelligence and cutting edge PhD studies in the US. At least for me - "Higher education" in India were a waste of time and nothing I would "acclaim".

**B. Roy, USA**

I am a Professor at Georgia Tech, in Atlanta, GA, USA and still carry an Indian passport after 25 years in the US. I fear that with the added 27% reservation, lack of infrastructure combined with poor student quality and relatively low salaries for professors in India, it will become increasingly hard to find educators in India that can compete with the best from America, Europe, Japan and China. I fear that the best academics in India might wind up leaving for better prospects in countries such as Australia and Singapore which are welcoming Indian immigrants. The govt needs to seriously rethink its approach to higher education in India. I am really concerned.

**Abhijit Chatterjee, USA**

An excellent article - I hope that scientists like CNR Rao that are also involved with policy and administration can institute these well recommended changes to alter the moribund landscape of Indian academia. Another medium for change would be to create incentives for Indian students that often leave India to pursue graduate studies in the US, Canada, UK for example, to return to India upon completion of their PhD's and seek professorships with Indian institutions. Our enriching experiences from well-funded graduate schools outside of India will surely serve as catalysts for transforming research and teaching approaches in the pure sciences and arts. Sadly, the severe lack of funding both for research and salaries (\$305 a month for a PhD holder?!) that currently persists will never encourage this at a significant enough scale.

**Dev Aiama, Kingston, Ontario, Canada**

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