Newspaper Clips
August 28, 2014

Setting up new IITs and IIMs important, but focus on maintaining quality

http://economictimes.indiatimes.com/industry/services/education/setting-up-new-iits-and-iims-important-but-focus-on-maintaining-quality/articleshow/41044306.cms

Institutions are built over several decades, and so, 100 days are too early to assess the government's performance in building new IITs and IIMs. The announcement had been made in the Union Budget presented by finance minister Arun Jaitley on July 10. He had said the government would build an IIT and an IIM in every state. In the two-and-a-half months after this announcement, the government is working to identify the locations for these new institutions. In a few months, the locations for these institutions might be announced. However, stakeholders and observers have debated this idea and found much to argue on both sides. The overwhelming opinion is that starting more such institutions is a bad idea, particularly because many newer IITs and IIMs are stilll struggling to get good faculty. Last week, at the Foundation Day ceremony of IIT Kharagpur, Pradeep Khosla, president, University of California, San Diego had this to say, , "Ideally, the expansion of IITs is not a bad idea if you could staff all the IITs with the faculty of the right calibre. But if you just expand IITs for the sake of expansion without faculty of the right calibre, then you are just harming the students."

Khosla is one of the most famous alumni of the IIT system. So, what he said would have been heard across the country. While what he said rings true, academic staff shortages have been a serious issue across institutions, and the IITs and IIMs are no exception. A human resources development ministry report two years ago estimated the shortage at about 60% in the new IITs. Conversations with IIM directors suggest that the situation in the new IIMs is even worse. Would this make their expansion a non-starter?

The answer to this question depends on how much time the government has given itself. Institution building is a multi-decade exercise. If you look at the example of the US, where majority of the world's best universities are located, all great universities are at least over a century old. Carnegie Mellon is the only university among the top 25 in the US founded in the 20th century, but it is still more than 100 years old. Indian institutions are going through a massive expansion, for the first time after two decades of independence. It is pointless to expect a smooth journey at least for one or two decades.

We need to ask a few more questions in our analysis. Are the new IITs and IIMs necessary? India's demand for engineering graduates has increased many times since the IITs were set up, and we could make a similar argument for the IIMs too. If we look at the next decade, to keep up with the increasing enrolment in higher education, the number of IITs and IIMs has to increase 10 times. Of course, engineering and management education need not be restricted to the IITs and IIMs, but it is far easier to maintain quality in an IIT or an IIM than in a state-run university. This was the logic behind expanding the IIT and IIM systems.

If we accept that expansion of the system is necessary, we have only one more question to ask: At what pace should they expand? It is easier to find an answer to this question when applied to the IITs. The number of young professors available is dependent on the number of PhD students graduating every year from the system and the number of students who go abroad for PhDs. IITs now hire about 300 new faculty every year, and there is little scope to increase this number. Some directors, after back-ofthe-envelop calculations, give the additional student intake possible at 1,000 a year. Whether we set up new IITs or not, the number of additional students in the system cannot exceed this in a year, if the IITs are to keep a healthy student-teacher ratio. Over the next decade, as the number of engineering PhD students increase two or three-fold, faculty recruitment can go up, and so can the number of students. New IITs do not have more than 250 students initially, and it will take time for them to set up shop and get new campuses. By the time all of them are functioning in their own campuses, IITs could afford to recruit more young faculty. So, setting up IITs in every state is quite possible if we take a long-term view.

Multiple-choice not likely for 2nd leg of IIT online entrance

Hindustan Times (Mumbai)

MUMBAI: The joint entrance examination, Advanced (JEE Advanced), for admission to Indian Institutes of Technology (IITs), is set to undergo various changes in its format for the academic year 2016-17, with plans to make it completely online.

The joint admission board of the institutes, in its recent meeting, also discussed changing the exam from multiple choice questions (MCQ) format to longanswer format.

“Board members felt having an MCQ pattern doesn’t test the understanding of a problem completely, and many get away by guessing the correct answer,” said a member of the board, on condition of anonymity.

While for JEE Main, the first leg of the IIT entrance test, aspirants have the option of choosing the exam format, JEE Advanced may completely do away with pen-and-paper tests. The paper will be conducted in one session, as opposed to the present offline format of two sessions.

“Going by the trend of JEE Main, where more than 80% students chose the online exam over the pen-and-paper format, coupled with the fact that other exams such as GATE and JAM are already conducted online, it is time JEE Advanced goes the online way,” said HC Gupta, former chairperson of JEE Advanced.

Students and professors of some IITs are also developing a system to facilitate error-free common counselling for the National Institutes of Technology (NITs) and the IITs, said sources.


WHY THE CHANGE

- Members of the Insti-
tutes' admission board
felt many get away by
guessing correct answers
in the MCQ pattern
- 80% aspirants had opted
for the online format for
JEE Main 2016. Also,
other tests for technical
colleges, such as GATE
and JAM, are already fully
online.

Common counselling for seat allocations at these institutes has been in the pipeline for two years, but IITs have not agreed to the proposal, as they had reservations about the credibility of the software being used for the process.

Hindustan Times ND 28/08/2014 p-4

IIT experts to suggest ways curb noise pollution

Darpan Singh
darpan.singh@hindustantimes.com

NEW DELHI: Noise levels in Panchshila Park have reached several notches above safety limits that many residents have started to suffer from hypertension, stress and hearing loss. Experts from IIT Roorkee have now been roped in to help solve the issue.

The National Green Tribunal (NGT) has called for help to relieve the 5,000-odd residents of the south Delhi colony.

This is not the first time that experts have been called in. Delhi's pollution watchdog and a multi-department panel had earlier filed separate detailed reports but the problem remained unsolved.

> THE PANEL SUGGESTED TEXT-BOOK STUFF. WE DID NOT ACCEPT THIS. WE WILL GIVE OUR SUGGESTIONS TO IIT EXPERTS.
> OMESH SAIGAL, RWA president

The noise level inside the colony is around 65-75 decibels (db), while the safe limit for daytime and night is 55 and 45 db, respectively.

The NGT said on Tuesday, "We wanted to identify a suitable place to put up an acoustical barrier, but that's not happened. IIT Roorkee experts visited the area. We direct the watchdog and the expert committee to work with IIT experts."

The tribunal is hearing a petition filed by Omesh Saigal, 72, RWA president and former Delhi chief secretary.

He sought installation of sound barriers to check severe noise pollution from heavy vehicles on outer ring road that cuts the colony in two. The NGT will hear the matter next on September 30.

The expert panel ruled out the installation of sound barriers.

Instead, it has asked the residents use double-doors and sound-proof glasses and develop vegetative barriers on boundaries.

The committee — comprising top officials from traffic, transport, road research, pollution, police, works and municipal departments — suggested a ban on pressure horns and overloaded trucks, reduction in speed, besides making the road fit for noise absorption.

Saigal is not impressed. "The panel suggested text-book stuff. We did not accept this report. We will give our suggestions to IIT experts," he said.

Saigal has sought creation of a noise barrier by building an opaque wall between the main carriageway and the service lane of the outer ring road.

An average Delhiite is exposed to noise levels much higher than safe that could lead to serious health implications — from hearing issues to heart conditions to sleep disorders.

Economic Times ND 28/08/2014

P-8

नॉर्थ-ईस्ट राज्यों के स्टूडेंट्स को IIT में मिलेगी ट्रेनिंग

[ऋतिका चोपड़ा | नई दिल्ली]

नॉर्थ-ईस्ट राज्यों के इंटीग्रेशन के पीएम नरेंद्र मोदी के आह्वान के बाद देश की प्रीमियर इंजीनियरिंग संस्था आईआईटी ने खासतौर पर इस रीजन के स्टूडेंट्स के लिए इंटर्नशिप और एक्सपोजर ट्रिप का प्रस्ताव किया है। पिछले हफ्ते आईआईटी के कॉलेजों ने पीएम नरेंद्र मोदी और एचआरडी मिनिस्टर स्मृति ईरानी को प्रेजेंटेशन दिया था, जिसमें छुट्टियों के दौरान इन संस्थानों के कैंपस में नॉर्थ ईस्ट के 2,016 स्कूली स्टूडेंट्स की मेजबानी का प्रस्ताव था। साथ ही, 250 कॉलेज स्टूडेंट्स को 8,000 रुपये का मंथली स्टाइपेंड भी दिया जाएगा। यह प्रेजेंटेशन आईआईटी गुवाहाटी के डायरेक्टर गौतम विश्वास ने दिया। आईआईटी के एक डायरेक्टर ने नाम जाहिर नहीं किए जाने की शर्त पर बताया, 'नॉर्थ-ईस्ट और देश के बाकी हिस्सों में मौजूद शैक्षणिक सुविधाओं में भारी असंतुलन है। इस इलाके के स्टूडेंट्स हायर एजुकेशन में मौजूद अवसरों से परिचित नहीं हैं, लिहाजा उनमें सफल होने की आकांक्षा नहीं रहती।

आईआईटी के इस प्रस्ताव का मकसद देश के बेहतरीन संस्थानों में इन छात्रों को कुछ समय के लिए लाकर पढ़ाई और जिंदगी के प्रति उनका रवैया बेहतर करना है।'नॉर्थ-ईस्ट राज्यों का इंटीग्रेशन एचआरडी मिनिस्ट्री के एजेंडे में अहम है और आईआईटी ने इस प्रोग्राम का प्रस्ताव एचआरडी मिनिस्टर स्मृति ईरानी के आदेश पर किया है। एक सरकारी अधिकारी ने बताया, 'जून में मंत्री ने आईआईटी कॉलेजों को नॉर्थ-ईस्ट के स्टूडेंट्स के लिए प्रस्ताव पेश करने को कहा। यह इस रीजन में शिक्षा का स्तर सुधरने तक एक लिहाज से तात्कालिक कदम है।' इस ईशान विकास स्कीम के तहत आईआईटी के 16 और इंडियन इंस्टीट्यूट ऑफ साइंस एजुकेशन एंड रिसर्च (आईआईएसईआरएस) के 5 संस्थान 504 स्कूलों से नौवीं और दसवीं क्लास के चुने गए 2,016 स्टूडेंट्स की मेजबानी करेगी। एक एकेडमिक ईयर में सात राज्यों में से हरेक के 63 स्कूलों को इस स्कीम में शामिल किया जाएगा।

Deccan Herald ND 28/08/2014
P-8

IIT-Kharagpur invites entries

The Entrepreneurship Cell of IIT-Kharagpur, a student organisation, has invited entries for its eighth annual business model competition Empresario'2015, *DHNS* reports from New Delhi.

The contest is open for students from across the world and the last date for submission of entries is October 20. Students can participate in the contest with business ideas in all the fields ranging from product and services to product design, and win a prize. "The prizes and services for the winners as per the last year are worth Rs 15 lakh, Entrepreneurship Cell said in statement.

For the first round of the Empresario, participants are required to fill up a questionnaire which asks in brief about their business idea. The questionnaire can be found on the website of IIT Kharagpur's Entrepreneurship Cell www.ecell-iitkgp.org/empresario.

Economic Times ND
28/08/2014 P-15

Raising Indian Standards in Math

Scholarships and dedicated institutions would raise the standards of mathematics in India and other developing countries

GLOBAL SCIENCE

Hari Pulakkat

As the dust settled on Manjul Bhargava and his Fields Medal, another interesting piece of news emerged from the International Mathematical Union (IMU) meeting in Seoul. It had actually been announced along with the Fields Medals, but the news had got lost in the noise around the award. Five Breakthrough Prize winners contributed $100,000 each for a scholarship for students of mathematics in developing countries. There are plenty of scholarships around the world, but this one was a bit different.

The Breakthrough Prize is a $3-million award given to outstanding researchers in mathematics, life sciences and fundamental physics. Five mathematicians won this award this year, and they decided to donate $100,000 each towards an endowment for scholarships for young mathematicians in developing and less-developed countries. However, the recipients will work in a good institute in another developing country, thereby increasing the chances that they will return to their own countries after their study. Those who study in the US or Europe often continue to work and live there.

This small award can go a long way in improving the mathematical achievement of developing and less-developed countries. When outstanding mathematicians return to their countries, they educate another generation of young mathematicians and thus raise the standards of the subject significantly over a period of time. Some Asian nations have followed this practice to improve the quality of mathematics in their countries.

As usual, China is a shining example. Another example is South Korea. In 1981, Koreans published just three papers in international journals. Now the country stands at 11th place in the world in terms of mathematical output, and its mathematics tradition has been created in just two decades. Asian countries are generally doing extremely well in mathematics, particularly in student achievement. China stands apart from the rest.

In last year's PISA survey, which measures student achievement in mathematics and reading in 65 countries, Shanghai – representing China – performed well above all other countries (India did not participate). China has also been in the first place in mathematics Olympiads for a long time. In contrast, India's position has been slipping steadily in the Olympiads and now stands at 39th place. This piece of data is deceptive, as Indian student interest in Olympiads has been declining due to competitive examinations.

On the other hand, despite performing poorly in student achievement, the US remains the top place for mathematical research. In terms of number of Fields Medals, the US is still closely followed by Russia and France. India is well behind in all indicators of mathematical achievement. It is a clear indication that poor scientific infrastructure is not the reason why India does poorly in science. Mathematics does not need expensive equipment, but India still performs poorly.

When outstanding mathematicians return to their countries, they educate another generation of young mathematicians and thus raise the standards of the subject significantly over a period of time

The Indian mathematical community is small compared to that of developed countries or China. As Manjul Bhargava noted in an interview to this paper, talented mathematicians go to engineering as the career options are more attractive there. There has been a change, however, in recent times. After the Chennai Mathematical Institute (CMI), opportunities have increased for studying mathematics at the undergraduate level. Some of its alumni are making a mark already in the international mathematics community.

The best example is Arul Shankar, who studied at CMI and later worked with Manjul Bhargava and won the Fermat Prize in 2011. Shankar is now a post-doctoral fellow at Harvard. A few more institutions like the CMI might raise the standards of Indian mathematics by attracting young students to the subject. Countries that produce good mathematics are generally seen to do well overall, although a clear causal link has not been established.

Italian Scientists Turn Food Waste Into Bioplastics

http://www.triplepundit.com/2014/08/scientists-work-creating-bioplastic-food-waste/

Food wastage causes a range of environmental problems when left to rot in a landfill. A staggering amount, 1.3 billion tons of food, is wasted globally every year, according to the United Nations Environment Program (UNEP). The carbon footprint of all that wasted food is estimated at 3.3 billion tons of carbon equivalent.

Wasted food also means wasted water. The amount of water used to produce food that is wasted is equivalent to the annual flow of Russia's Volga River or three times the volume of Lake Geneva. That is not good at any time — but becomes particularly poignant during a time when the entire state of California is in its third year of drought. There is also an economic cost to food waste — $750 billion a year.

On to another problem: Conventional plastic is made from petroleum, a fossil fuel, and contributes to climate change. Bioplastics are made from plant material and are an alternative to conventional plastic. However, the multiple steps needed to produce bioplastics mean more energy is needed. And the crops used to produce them, like corn, are probably better suited for human consumption.

As a solution, a group of scientists at the Italian Institute of Technology (IIT) in Genova, Italy, are working on ways to create bioplastic from food waste. Their results were published earlier this summer in American Chemical Society's (ACS) journal Macromolecules.

IIT scientists looked at the process for creating cellophane, which includes passing cellulose — the material that makes up plant cell walls — through acid and alkali baths. They found out that when cellulose derived from cotton and hemp is dissolved in the common chemical trifluoroacetic acid, it is converted to a form that can be molded into plastic without having to be processed any further.

They tried the same process on vegetable waste products that included rice hulls, cocoa pod husks, spinach and parsley stems obtained from an Italian company that powders vegetables to be used in vegetables drinks and colored pasta. As Ilke Bayer from IIT said, "These are the parts we don't want to eat." Or as the scientists wrote in their study published in Macromolecules, "Bioplastics with a wide range of mechanical properties were directly obtained from industrially processed edible vegetable and cereal wastes."

From electronics to food packaging, plastics are so widely used that life as we know it would come to a standstill without them. Perhaps one day bioplastic from food waste will be used in the various applications our 21st century lives depend on.