Newspaper Clips
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Hindustan Times ND 06/11/2015   P-7

To save paper and environment, IIT-D to go completely paperless by 2016

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NEW DELHI: The Indian Institute of Technology (IIT) Delhi is planning to soon go paperless with all inter-departmental as well as administrative communication being conducted through e-office, in a move aimed at saving paper and protecting environment.

IIT-D is already in the process of digitising all its files to ensure a smooth transition to e-office system which will enable all administrative work to be conducted using electronic files. Officials said they have procured e-office system from National Informatics Centre (NIC).

"We want to make all administrative work digital which will help us increase efficiency. We have taken e-office system from NIC and slowly moving to online system. All the existing files will be digitised and saved in the system so that it can be accessed as and when needed," said Sushil, deputy director, operations.

He said the institute, which is probably the first IIT to move its administration to digital mode, will go fully online from January or February after which all file movement will happen online.

THE INSTITUTE WILL DIGITISE ALL FILES TO ENSURE THAT ALL ADMINISTRATIVE WORK IS CARRIED OUT ELECTRONICALLY

"We will take a few months to fully move to a paperless administration. The training is already going on to take everyone on board for the launch of the new system. The whole administration will go online by the month of January or February. Our aim is to go completely paperless," he said.

The institute, which is already a zero-waste campus, is already phasing out hard files from its system and transforming them into e-files for future use. "All files will be available in the electronic format. All physical files will be done away with in a phased manner. All head of departments, deans and others will communicate online rather than sending papers, he said.

Officials said the move will not only help the institute cut down use of paper but also help them in making their work flow efficient.

Mint ND 06/11/2015   P-9

Govt looks to promote research

New Delhi: The government on Thursday launched a joint initiative of India's leading educational institutions and several ministries to promote research and provide engineering and technological solutions to challenges ranging from climate change to healthcare. The Imprint India initiative will pull in industries and create a single window clearance system for research funding. The Indian Institutes of Technology (IITs), who will coordinate the initiative, said they have demanded at least ₹1,000 crore for the purpose. The fund will be generated from three sources—inter-ministerial research funds, industry contributions and a portion of the government funds allocated to the IITs. **PRASHANT K. NANDA**

Prez launches 'IMPRINT India' to counter challenges

Project to develop roadmap to remove obstacles to growth

NEW DELHI, PTI: President Pranab Mukherjee on Thursday launched Impacting Research Innovation and Technology (IMPRINT) India', a joint initiative of country's top educational institutes, aimed at developing a roadmap for research to solve major engineering and technology challenges relevant to India.

The initiative is based on Prime Minister Narendra Modi's suggestion that research done by institutions of national importance must be linked with immediate requirements of the society at large.
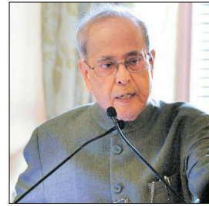
The President said it is necessary to "develop in our students a scientific temper," which allows the flight of imagination beyond the realm of grades and classrooms.

"Promotion of research at the under-graduate level would assist such an objective. The link between progress and innovation is direct. History is witness to many nations low on resources emerging as advanced economies only on the strength of rapid technological development," Mukherjee said while launching the project during Visitors' Conference at Rashtrapati Bhavan here.

Objective

The objectives of this initiative is to identify areas of immediate relevance to society requiring innovation, direct scientific research into identified areas, ensure higher funding support for research into these areas and measure outcomes of the research effort with reference to impact on the standard of living in the rural and urban areas, a press release by the President's office said.

The idea of launching IM-

THE BENCH: Promotion of research at the under-graduate level will assist such an objective. The link between progress and innovation is direct. History is witness to many nations emerging as advanced economies

PRINT India, which is now a joint project of IITs and IISc, originated during the conference of Chairmen, Board of Governors and Directors of Indian Institutes of Technology convened by the President in August last year.

IMPRINT India will focus on 10 themes, with each to be coordinated by one IIT or IISc, including Health Care (IIT Kharagpur), Computer Science and ICT (IIT Kharagpur), Water Resources and River systems (IIT Kanpur), Defence and Manufacturing (IIT Madras), among others.

दस आईआईटी की मदद से आगे बढ़ेगी इम्प्रिट योजना

राष्ट्रपति भवन में आयोजित कुलाध्यक्ष सम्मेलन में राष्ट्रपति प्रणब मुखर्जी ने उद्घाटन किया

हरिभूमि ब्यूरो.नई दिल्ली

इम्पैक्टिंग रिसर्च इनोवेशन एंड टेक्नोलॉजी (इम्प्रिट) का बृहस्पतिवार को राष्ट्रपति भवन में आयोजित कुलाध्यक्ष सम्मेलन में राष्ट्रपति प्रणब मुखर्जी ने उद्घाटन किया। आईआईटी कानपुर को इस योजना को अमलीजामा पहनाने वाला राष्ट्रीय संयोजक बनाया गया है।

साथ ही आईआईटी संस्थानों के बीच शोध कार्य का विभाजन कर दिया गया है। मानव संसाधन विकास मंत्रालय द्वारा दी गई जानकारी के मुताबिक इम्प्रिट के लिए चुनी गई 10 थीमों पर शोध करने के लिए दस आईआईटी और आईआईएससी संस्थान का चयन किया गया है। इसमें हेल्थकेयर के विषय पर शोध की जिम्मेदारी आईआईटी खड़गपुर को

■ कार्यविभाजन हुआ, 10 थीमों पर किया जाएगा शोध

सौंपी गई है। इनफॉरमेशन एंड कम्युनिकेशन टेक्नोलॉजी (आईआईटी खड़गपुर), एनर्जी (आईआईटी रूड़की), नैनो-टेक्नोलॉजी हार्डवेयर (आईआईटी बॉम्बे), वॉटर रिसोर्सेज एंड रीवर सिस्टम्स (आईआईटी कानपुर), एडवांस मेटिरियल (आईआईटी कानपुर), मैन्युफैक्चरिंग (आईआईटी मद्रास), सिक्योरिटी एंड डिफेंस (आईआईटी मद्रास), इनवायरमेंटल साइंस एंड क्लाइमेट चेंज पर (आईआईएससी बेंगलुरु) शोध कार्य करेगा। इस अवसर पर मौजूद केंद्रीय मानव संसाधन विकास मंत्री स्मृति ईरानी ने कहा इम्प्रिट से

सामाजिक क्षेत्र में शोध कार्य में आसानी होगी। उन्होंने पीएम का इस सम्मेलन में आने और उच्च शिक्षण संस्थानों में विदेशी फैकेल्टी के आकर पढ़ाने के उनके विचार की प्रशंसा करते हुए कहा कि इससे नवंबर महीने की शुरुआत से आगामी एक वर्ष तक देश में 400 विदेशी शिक्षकों का सरकार स्वागत करेगी कि वो देश में आकर छात्रों के साथ नई जानकारी साझा करें और फैकल्टी के सदस्यों को पढ़ाने की नई तकनीक के बारे में बताएं।

उन्होंने मूक्स और स्वयं योजना के जरिए पाठ्यक्रमों के तैयार किए जा रहे ई-कंटेट के विचार को लेकर भी पीएम की प्रशंसा की। सम्मेलन में केंद्रीय मानव संसाधन विकास राज्य मंत्री (उच्च-शिक्षा) प्रो.रामशंकर कठेरिया, केंद्रीय रसायन एवं उर्वरक राज्य मंत्री

हंसराज अहीर, मानव संसाधन विकास मंत्रालय में उच्च-शिक्षा विभाग में सचिव विनयशील ऑबेराय मौजूद थे। इम्प्रिट योजना के लिए फंड को लेकर पूछे गए एक प्रश्न के जवाब में केंद्रीय मानव संसाधन विकास मंत्रालय में उच्च-शिक्षा विभाग के सचिव विनयशील ऑबेराय ने कहा. तीन स्तर पर इसकी व्यवस्था की जाएगी जिसमें मंत्रालय में शोध के लिए जो फंड मौजूद है उसका प्रयोग किया जाएगा।

इसके लिए मंत्रालय में अलग से फंड की भी व्यवस्था की जाएगी। इसके अलावा एक अंतर-मंत्रालयी फंड भी बनाया जाएगा जो योजना को मदद करेगा। इन थीम्स पर आधारित शोध कार्य के लिए जो भी संस्थान आगे आएगा उसका मंत्रालय स्वागत करेगा।

Business Standard ND 06/11/2015   P-4

Research network must to nurture start-ups: President

India is one of the fastest growing start-up bases worldwide and the heads of institutes of higher learning must work towards creating an innovation and research network to produce entrepreneurs and nurture innovations, President Pranab Mukherjee said on Thursday.

Indian youth were second to none in entrepreneurship, he said, while launching IMPRINT India, an initiative of the Indian Institutes of Technology (IITs) and the Indian Institute of Science (IISc). "India serves as the fastest growing start-up base worldwide and stands third — with 4,200 start-ups, next only to the US and the UK. The government has initiated the Start-up India, Stand-up India campaign to incentivise entrepreneurial ventures."

IMPRINT India would help develop a road map for research to solve major engineering and technology challenges in 10 technology domains relevant to India. The institutes would choose a domain or two: Healthcare (IIT-Kharagpur), computer science and ICT (IIT-Kharagpur), advanced materials, water resources and river systems (IIT-Kanpur), sustainable urban design (IIT-Roorkee), defence, manufacturing (IIT-Madras), nanotechnology hardware (IIT-Bombay), environmental science and climate change (IISc-Bangalore) and energy security (IIT-Bombay).

Mukherjee said there was a need to work towards creating an innovation and research network that would produce entrepreneurs and nurture innovations. "The setting up of innovation clubs in 60 central institutions in the past two years is a good beginning for a platform where novel ideas can be nurtured and innovators, mentored, to develop new products." **BS REPORTER**

Financial Express ND 06/11/2015   P-8

UNVEILING THE FUTURE

Microsoft looks to plug into government plans and Indian e-commerce entrepreneurs

Less than 45 days after prime minister Narendra Modi's visit to Silicon Valley, the return visits have started. First Facebook's Mark Zuckerberg attended a town hall at IIT Delhi last month. On Thursday, the first edition of Microsoft's *Future Unveiled* was launched by CEO Satya Nadella in Mumbai. That's also because Maharashtra houses two of Microsoft's three data centres in India. Both visits are closely interlinked to the NDA government's Digital India and Smart Cities plan. As far as Maharashtra is concerned, the Centre plans to build 50 smart villages by the end of 2016, starting with Arinsal, which will be done with support from Microsoft.

To plug into India, Microsoft is starting a programme for start-ups that will create a single platform to bring data together to solve urban problems. Getting 50 start-ups as partners, Microsoft is aiming to cover 50 of India's proposed 100 smart cities by next year. That should give a boost to the programme. The Smart City programme has also got support from the French government that has committed 2 billion euros for the Smart City projects in Puducherry, Chandigarh and Nagpur. Meanwhile, Nadella finds the Indian e-commerce and start-up space one of the "most exciting" globally. As a first step, it is partnering with JustDial, PayTM and Snapdeal to help them innovate with cloud and analytics. So, government plans and small entrepreneurs have got a booster shot.

Dainik Jagran ND 06/11/2015   P-15

आइआइटी सीट छोड़ने पर दोबारा मौका नहीं

जागरण संवाददाता, धनबाद : अगर आपने इस साल जेईई एडवांस परीक्षा पास करके भारतीय प्रौद्योगिकी संस्थान (आइआइटी) की सीट छोड़ी तो 2016 में आइआइटी की प्रवेश परीक्षा में बैठने का मौका नहीं मिलेगा। आइआइटी गुवाहाटी की ओर से जेईई एडवांस 2016 से संबंधित दिशा निर्देशों में यह जानकारी दी गई है।

इस बार जेईई एडवांस परीक्षा का आयोजन आइआइटी गुवाहाटी की ओर से कराया जा रहा है। प्रवेश परीक्षा का नोटिफिकेशन नवंबर के प्रथम सप्ताह में जारी होगा। इससे पहले आइआइटी गुवाहाटी ने प्रवेश परीक्षा से संबंधित सवाल और उनके जवाब अपनी वेबसाइट पर जारी कर दिए है।

अगर किसी छात्र ने संयुक्त काउंसिलिंग के बाद एनआइटी की किसी सीट पर एडमिशन लेने के बाद उसे छोड़ दिया होगा, तो वह दोबारा जेईई मेन और जेईई एडवांस परीक्षा के बाद आइआइटी की सीट पर अपनी दावेदारी पेश कर सकता है। खास बात यह भी है कि अगर किसी छात्र ने आइआइटी या आइएसएम के प्रिपरेट्री कोर्स में इस साल एडमिशन लिया होगा, वह नए सिरे से जेईई एडवांस 2016 दे सकता है।

Hindustan Times ND 06/11/2015   P-10

'Institutions should focus on innovation'

HT Correspondent

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NEW DELHI: Prime Minister Narendra Modi on Thursday said that institutions in India must concentrate on innovation as the key to achieve dreams.

Modi was addressing the second day of the 'Visitors' conference at Rashtrapati Bhavan hosted by President Pranab Mukherjee, in which the latter launched 'IMPRINT India', a joint initiative of the country's top educational institutes aimed at developing a roadmap for research to solve major engineering and technology challenges. HRD minister Smriti Irani was also present.

It is based on Modi's suggestion that research by institutions of national importance must be linked with immediate requirements of the society at large and should be socially relevant.

IMPRINT India will focus on 10 themes, with each to be coordinated by one IIT or IISc, including health care (IIT Kharagpur), computer science and ICT (IIT Kharagpur), water resources and river systems (IIT Kanpur), defence and manufacturing (IIT Madras), among others. Officials said that an initial sum of ₹1,000 crore has been earmarked.

Modi said that although science is universal, technology needs to be local to meet the demands of the country. "Our initiative on solar energy has surprised many but if we are doing innovation in technology and energy, it can be a big service," he said.

BRAIN DRAIN

Where do educated Indians go?

At 2.24 million, highly educated Indians comprise 62% of total Indian-origin migrants to OECD countries

By Dipti Jain & Ragini Bhuyan

In his speech at Silicon Valley in September, Prime Minister Narendra Modi said that the so-called brain drain is actually brain gain—"a brain deposit that is waiting for an opportunity to be of use to the motherland".

That deposit is multiplying fast. According to a report from the Organisation for Economic Co-operation and Development (OECD), highly educated Indians were the fastest growing set of emigrants to OECD countries in the decade to 2010-11. The OECD countries include 34 wealthy countries (based on per capita income) such as the US, Australia, Israel, South Korea and several European nations.

Look at the numbers. The overall migrant population of Indian origin in developed countries was 3.6 million in 2010-11, an increase of 83% over the previous decade. But the growth in the population of highly educated Indians was even faster at 123%. At 2.24 million, highly educated Indians comprise 62% of total Indian-origin migrants. This rate is higher than for migrants from other Asian countries such as Singapore (55.8%), the Philippines (52.3%) and China (43.8%).

When it came to highly educated individuals, Indians were the most populous at 2.24 million, but Mexico, an OECD country itself, sent the most people (about 12 million) to other OECD nations.

With only about 8% of Indians being graduates, according to Census 2011 numbers, this means that about three out of every 100 highly educated Indians work or study abroad, a rate which has marginally increased between 2000-01 and 2010-11. The numbers are higher for doctors and nurses, with about eight out of every 100 of them migrating to a developed country.
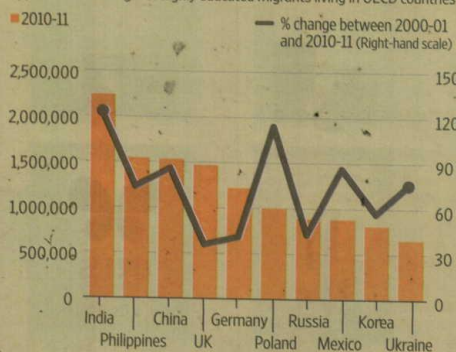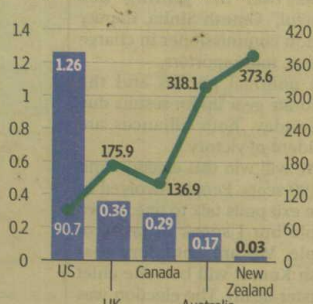
Note that as of January 2015, OECD nations accounted for about one-fifth of the non-resident Indian population, according to the ministry of overseas Indian affairs (though the comparable OECD report numbers don't strictly match). So the migration rate of Indians may be even higher for educated Indians as they move to other coun-

tries, such as those in the Gulf.

The OECD's 34 member states are Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the UK and the US.

Experts say this brain drain highlights the lack of job opportunities that match up to education levels, and underlines concerns over India losing its assets. The numbers have also risen sharply because of a surge in the number of Indians opting for tertiary education. "India is clearly a huge knowledge economy. The number of professionals produced in different areas is very huge and hence the number of emigrants appears larger," said Jayan Jose Thomas, assistant professor at IIT Delhi. Compared to nations like China, India has the added advantage of many of its population being

fluent in English, which in turn allows them to integrate well in Anglophone countries such as the US, the UK and Canada.

The OECD report lays particular stress on the migration of health professionals. India saw the highest number of doctors move to OECD countries in 2010-11. Over 86,000 doctors from India were working in OECD countries in 2010-11, with Chinese doctors coming in a distant second at just over 26,000. India also had the second highest number of nurses working in these countries at 70,471.

"India does produce a large number of doctors as compared to other countries. Hence, while the total number of doctors moving to other countries is higher, the expatriation rate is quite low," Thomas added. As of 2010-11, the expatriation rate for doctors from India to OECD countries stood at 8.6%. This is relatively low, especially compared to that of its neighbours, Sri Lanka (28.3%), Pakistan (11%) and Nepal (22.3%).

India's expatriation rate for nurses was only 5.4%. China's, though, was much lower (language may play a role in this), with the expatriation rate for

both doctors and nurses at around 1%.

With health infrastructure already poor in India, the loss of doctors and nurses acts as a double whammy for the country. According to a report by the Indian Council of Medical Research, the doctor-population ratio in India as of 2013 was 1:1,800—much lower than the World Health Organization's recommended ratio of 1:1,000.

Does India stand to lose out via this "brain drain"? Opinions differ, but it is clear that India has made a lot of effort to engage with its diaspora, as the much-hyped Pravasi Bharatiya Divas (an annual gathering of the Indian diaspora) testifies.

However, data on how successful these efforts have been is hard to come by, other than the fact that remittances have increased. China has been more successful in this regard. It runs an aggressive programme to attract skilled members of its diaspora. A UN report quoting statistics from China's ministry of education put the number of Chinese overseas students returning at 272,900 in 2012—an increase of 46.57% from 2011.

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INTERNATIONAL DESTINATIONS

PRAJAKTA PATIL/MINT

About three out of every 100 highly educated Indians work or study abroad, a rate which has marginally increased between 2000-01 and 2010-11. The numbers are higher for doctors and nurses, with about eight out of every 100 of them migrating to a developed country.

WHERE THEY COME FROM

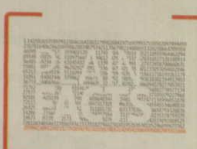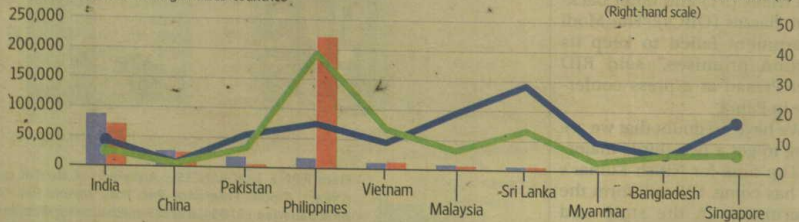Top countries of origin of highly educated migrants living in OECD countries

- 2010-11
- % change between 2000-01 and 2010-11 (Right-hand scale)

MOST ATTRACTIVE DESTINATIONS FOR INDIANS

- Highly educated emigrants (in mn)
- % change since 2000-01 (Right-hand scale)

LOSS TO HEALTH SECTOR AT HOME

- Number of doctors working in OECD countries
- Number of nurses working in OECD countries
- Expatriation rate of doctors (%)
- Expatriation rates of nurses (%) (Right-hand scale)

Source: OECD report

Times Of India ND 06/11/2015   P-7

UGC fellowship: Students get a say in review panel

HRD Minister Irani Non-Committal On Increasing Stipend

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New Delhi: The trust deficit on the issue of non-NET fellowship is refusing to go as students marched to the ministry of human resource development on Thursday. After meeting HRD minister Smriti Irani, who assured them of representation in the review committee and consultation, the students came back to University Grants Commission (UGC) to continue their protest for the 15th day.

The students allege that the government has no intention of continuing with the fellowship since otherwise it would have scrapped the review committee. They plan to formulate a strategy to strengthen the movement demanding expansion and increase of the fellowship.

On Thursday afternoon, the protesting students, accompanied by Yogendra Yadav of Swaraj Abhiyan, marched to the HRD ministry. Nearly a thousand students from Jawaharlal Nehru University, Jamia Millia Islamia, Delhi University and Ambedkar University shouted slogans demanding scrapping of the review committee and extending the non-NET fellowship to state universities as well. They also demanded an increase in the stipend.

Irani spoke to Shehla Rashid, vice-president of JNU Students' Union, who was leading the protest. While the minister reiterated the government's position of not scrapping the fellowship, the student leader demanded that the review committee be scrapped and stipend increased. Irani, however, refused to give any commitment on this. The students then made it clear that the agitation will continue.

"It is a victory for our movement that Smriti Irani was forced to come out and talk to us. It was a strategy to do some damage control. The MHRD is surprised that despite all attempts to sabotage our movement, there is such a huge mobilisation of students. We've faced ABVP hooliganism and a lathi-charge and have been called anti-national too. Above all, Smriti Irani personally tried to destabilise our movement by issuing misleading circulars. Despite this, the students are not ready to trust the government," said Rashid.

Rashid said the only positive outcome of the meeting with Irani was that the students will get a representation in the committee. "The minister said nothing new in addition to what was already being said. She stated that non-NET fellowships have not been discontinued. If so, then why is the committee needed," Rashid asked.

Giving reasons for the trust deficit, the protesters said that the minister kept saying that the stipend may not be scrapped and some "criteria" will be introduced, but new rules will make it impossible for students to avail it.

GRANT GROUSE

NON-NET FELLOWSHIP

➤ **All bona fide research scholars** who haven't qualified for NET-JRF are eligible for UGC's non-NET fellowship introduced in 2006

➤ **Stipend is limited to** MPhil and PhD students of 50 institutions, including all central universities

➤ **Nearly 35,000 students** are availing these fellowships now

➤ **An MPhil student** gets ₹5,000 a month, a PhD student ₹8,000

THE UPROAR

➤ **On Oct 7, 2015, UGC** decided to discontinue the fellowship

➤ **After the decision was uploaded** on the UGC website two weeks later, students' groups launch protests alleging the move would deter poor students from pursuing research. They demand recall of the decision and increase of the stipend amount

➤ **Academics from various campuses** express solidarity with the protesting students

STATUS UPDATE

➤ **After 55 hours of protests and PMO's intervention,** HRD ministry asks UGC on Oct 23 to assure agitating students that the decision would be referred to an expert panel

➤ **On Oct 25, MHRD announces** on social media that the fellowship won't be scrapped; subsequently issues formal order cancelling UGC's decision

➤ **Students, however, continue** to protest for scrapping of the review committee

Photo: Vipin

HRD minister Smriti Irani meets protesting students, assures them of decision in their favour

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HRD minister meets protesting students

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NEW DELHI: Union Human Resource and Development (HRD) minister Smriti Irani on Thursday met students who had been protesting for the past two weeks against the government's decision to discontinue the non-Net fellowship.

The students have been occupying the University Grants Commission office in Delhi for 15 days now. On Thursday they marched to the HRD ministry and staged a protest there.

As the students shouted slogans, the minister came out addressed them.

But the agitating students were not satisfied with what the minister told them.

"She did not give any concrete assurance but just said that the decision will now depend on the review committee," said Sucheta De of the All India Students Association (AISA).

Later, a delegation consisting of Jawaharlal Nehru University (JNU) students union members and students from Jamia Millia Islamia, Ambedkar University and Delhi University met the minister separately.

The delegation told the minister that the movement of students would continue till all their demands were met.

Bosch signs MoU with IISc to drive local innovation

http://www.livemint.com/Companies/LKZFC8pBJhJIog0zpka0dO/Bosch-signs-MoU-with-IISc-to-drive-local-innovation.html

The collaboration is expected to strengthen Bosch's research and development in areas including mobility and healthcare

New Delhi: In a bid to sharpen its focus on India-specific requirements, German automotive firm Bosch Gmbh has signed a memorandum of understanding (MoU) with Indian Institute of Science (IISc), Bangalore.

The MoU, which was signed on 28 October, was exchanged between Bosch and IISc in the presence of President Pranab Mukherjee at Rashtrapati Bhavan, New Delhi, on Thursday.

This follows German chancellor Angela Merkel's visit to the Bosch facility in Bengaluru, as part of her three-day state visit to India last month, with focus on innovation and skills development.

While Bosch's core strength has been the company's ability to manufacture its products according to the needs of the Indian market at a competitive price, the firm has been increasing its focus on non-core areas such as energy and water for the last couple of years. The collaboration is expected to strengthen the company's research and development in areas including mobility and healthcare in addition to energy, water and environmental protection.

"Based on this MoU, we intend to develop solutions that address key India-centric requirements. Innovation has always been a special strength of Bosch. This partnership between industry and academia further enforces our ties with the IISc and underlines our commitment towards local innovations, according to our slogan 'Invented for life'," said Steffen Berns, president of Bosch Group in India. "We expect to see positive results as we collaborate in research on areas of strategic interest, such as mobility, healthcare, energy and water."

Many global companies, including automobile- and smartphone-makers, have been setting up expert teams in India to gauge the problems persisting in the country so as to understand the need of customers and address them.

Bosch collaboration with IISc started in 2011, when the company granted Rs.115 crore to IISc for a period of 10 years. This was a part of the company's Rs.300 crore initiative 'Bosch InterCampus Program' that aimed to improve research conditions for undergraduates and scientists in the university sphere in Germany, China, India and the US over a 10-year period. The Robert Bosch Centre for Cyber Physical Systems that does research on concepts like Internet of Things and its applications in various fields was set up at IISc with this grant and is currently in its fourth year.

According to Anurag Kumar, director of IISc, the centre has "helped define a trail for industry-academia collaboration" and with this MoU, "Bosch is looking to engage in deeper research that will improve the quality of life in totality".

"These partnerships symbolize Bosch's innovation focus in India. It will increase our problem solving capabilities, and at the same time the collaboration will result in sharing our learnings for the benefit of society. I believe it is absolutely essential for the growth of innovation in India," said Vijay Ratnaparkhe, president, Bosch Engineering and Business Solutions.

Are Research Institutes World-class or Worthless?

http://www.newindianexpress.com/columns/Are-Research-Institutes-World-class-or-Worthless/2015/11/06/article3115268.ece

Last month, President Pranab Mukherjee congratulated the Indian Institute of Science (IISc) for being rated 147th in the world in the latest university rankings brought out by UK-based Quacquarelli Symonds. However, just three months earlier at the IISc convocation, Infosys founder Narayana Murthy had lamented that there had been no breakthrough research of any significance from IISc in all its years of existence. "Is there a single recent invention from India that has contributed to humanity's welfare?" he had pointedly asked. He concluded his remonstrations by wondering aloud whether "premier" institutes like IISc had made any worthwhile contribution at all to society. So which is it? Are premier research institutes like IISc "world-class" as our President's plaudits seem to suggest, or are they close to worthless as our most successful global entrepreneur appears to believe? Surely, Pranab Mukherjee's satisfaction on achieving a global rank of 147 is a bit underwhelming.

It wasn't always like this. After all, JN Tata had founded IISc on the bedrock of high-modernist belief that the well-being of the nation was to be secured through advanced scientific research and large-scale industrialisation. The science and engineering departments that formed the core of the institute were therefore patterned directly on the model of the western research university. There is no inkling in the institute's archives from that period to suggest that any form of knowledge other than western science and technology was given consideration as a worthwhile endeavour.

In the public at large, however, campaigns such as "swadeshi" during the National Movement had given rise to intense debates regarding the different forms of knowledge. We could even say that "knowledge" implicitly came to be seen in conjunction with the idea of self-determination, raising questions about what form a democracy of knowledges ought to take. Nonetheless, the network of science laboratories and universities set up in the immediate aftermath of independence presupposed western science to be the overarching epistemic framework within which all questions had to be posed. It was only later in the face of mounting problems caused by the large-scale displacement of people in the name of "development", catastrophic industrial accidents like the one at the Union Carbide plant in Bhopal, and the disastrous pollution of the nation's air, land, and water resources, that our much-vaunted scientific establishment revealed itself to be a helpless bystander at best — and a complicit entity at worst.

The philosopher George Santayana once complained that his scientific colleagues at Harvard were so caught up in their microscopic projects that they were not even able to perceive the problems their applications caused at the aggregate level. Scientists often rue the lack of funds to do research, but increased funding is scarcely the answer to the deep-seated problems that plague our research institutes. Besides, in an era in which research findings from heavily-funded well-equipped western universities can be disseminated instantly, on what grounds can an institute in a poor country like India possibly hope to compete? Is it even realistic to measure the performance of our lumbering research bureaucracies by the same yardstick as western institutions? Might it therefore be time to rethink what "knowledge" and "research" mean in a setting like India's without recourse to the globally-accepted definitions of these words?

After all, India didn't survive as a civilisation for millennia without any "knowledge" or "research". But for these words to be meaningful in the Indian context, they have to be extricated from the hothouse environment of today's industrial-style knowledge production and made to serve a different purpose. We may have to pay far more attention to forms of tacit knowledge accumulated as a result of long experience with a skill or trade. Sharing of tacit knowledge does take place even in a standardised research environment like a scientific laboratory, but this process needs to be conceived more expansively to include many more knowledge constituencies.

The knowledge and skills needed to tackle the many challenges confronting us as a nation are already widely available to us, but they happen to be dispersed amongst a large number of trades, professions, individuals and communities. The challenge before us is to devise creative ways for these skills and knowledge-forms to be tapped, utilised, and delivered to those who need them. Much new knowledge can be generated by drawing on such dispersed sources both within and outside formal research organisations like IISc and facilitating knowledge flows between them. However, a major roadblock is that tacit knowledge will not get fully shared in the absence of epistemic equality between differing kinds of knowledge repositories. This calls for a broader democracy of knowledge and a strategy for the governance of research institutions that goes far beyond the creation of a handful of interdisciplinary departments.

Unfortunately, as things stand today, the environment at our premier research institutes is not conducive to knowledge-sharing even among people within the same department! This is because research productivity in these institutes is usually measured by the number of journal papers produced, and the race to maximise the number of publications has given rise to a culture of individualism, secrecy and mistrust. A single-point focus on a number of papers may well result in a marginal increase in the stock of scientific knowledge, but few bold insights can be expected to emerge from such an arrangement.

Narayana Murthy's reproach that there is no breakthrough research coming out of our premier institutes is, therefore, fully justified and should not at all surprise us. How could it be otherwise when the entire deck of incentives in these institutes is so heavily stacked against any form of intellectual risk-taking? Innovative knowledge generation in a society like India's can only occur in an environment where a multiplicity of knowledge forms are encouraged to commingle and play with one another. This implies not only greater traffic of ideas between the sciences and the arts, humanities, social sciences, and policy-making but also calls for interchange and cross-fertilisation between formal and institutionally produced knowledge and the manifold forms of informal and tacit knowledge that lie embedded in the everyday practices of our communities.

All this may still not be enough to satisfy the likes of Narayana Murthy. But if Pranab Mukherjee's premature accolades risk pushing us towards aiming too low, Narayana Murthy's rebuke takes its cue from a global model of knowledge that may not only be beyond our reach; it may not even be the most desirable path to solving our most pressing problems.

One of the winners of this year's Nobel Prize for medicine is the 84-year-old Chinese pharmacologist Tu Youyou who was recognised for rediscovering artemisinin, a plant derivative that has significantly reduced death rates from malaria. She first learned about this compound from a scroll of traditional Chinese remedies

dating back to 400 AD. Youyou routinely refers to herself as the professor of 'the three nos': no post-graduate degree, no experience working abroad, no membership in the Chinese Academy of Sciences. Our premier institutes, on the other hand, are choc-a-block with professors with many "yeses"; yet, in answer to Narayana Murthy's question whether there was a single recent invention from India that has contributed to humanity's welfare, all these "yeses" unfortunately add up to a resounding "no". Instead of hankering after global rankings based on dubious measures, perhaps, we should take a leaf from Youyou's book and try to foster a more equitable exchange between specialised scientific expertise and the infinite forms of tacit locally embedded knowledge that we already possess.