

# Newspaper Clips September 14-15, 2014

## September 14

Hindustan Times ND 14/09/2014 P-15



The Delhi IT campus. SHREYA KHANDEKAR/HT PHOTO

### THE GENDER DIVIDE

Sources at the Department of Science and Technology say that there has been no comprehensive gender audit since 2008

IT qualifying exam (JEE) in 2008

3,11,258  
Total candidates who appeared  
8,652  
Who qualified

78,159  
Girl candidates who appeared

840  
Girl candidates who qualified  
% of girls in qualified cohort: 9.7

#### RECOMMENDATIONS

- Introduce time-bound recruitment target system
- Women representation in search/ hiring committees
- Women-friendly proceeding of search/selection/hiring committees
- Targetted research programmes for women scientists
- Promote women scientists as science planners and managers
- National-level gender-segregated data collection, annual updation and processes monitoring

Percentage of women scientists among total at some organisations in 2008



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Percentage of women scientists among total at some organisations in 2008

Centre for Scientific and Industrial Research	4,556 (18.05%)
Department of Science and Technology	659 (20.8%)
Department of Atomic Energy (BARC)	4,173 (5%)
Department of Biotechnology	208 (27.4%)
Indian Council of Medical Research	561 (29.0%)
Defence Research and Development Organisation	6,890 (14%)
Indian Council of Agricultural Research	2,378 (14.3%)

Sourced from the Report of National Task Force for Women in Science

### EXPERIMENTAL SCIENTIFICALLY SPEAKING

## 'SCIENCE IS A JEALOUS MISTRESS'

For neuroscientist Vijayalakshmi Raviindranath, the nomination as one of two first women scientists in the IT council is only the latest in a series of firsts that sum up her career. Surprisingly, Raviindranath herself denied an IT career because of her father's firm belief that an engineering course is not meant for a woman. "I owe whatever I am today to my father and my husband. My father really impressed upon me the importance of a good education. He valued it even more than an inheritance. And yet, he didn't allow me to write my IT entrance examination. And when the Andhra Pradesh University offered me an engineering seat, because I had stood first in my school-leaving examination, he didn't want me to accept it. I had to go for a B.Sc. and M.Sc.," she recalls. Dressed in a sari, her hair neatly tied back and a bit of gold jewellery around her neck, wrist and ears, Vijayalakshmi Raviindranath has no airs about her decision-making role because many help women bring different skill sets to the table. "For example, women like to discuss and work by consensus more than men," Raviindranath explains. "The need to discuss, she feels, is not just a tendency with women, but also important in the field of science." "You need to sound your ideas," she says, adding, "because there are a few women scientists. I have had to suffer from the lack of having a sounding board all my life. Not just in India, but across the world, women scientists are extremely isolated."

### IT'S NOT JUST IN INDIA. WOMEN SCIENTISTS ARE ISOLATED ACROSS THE WORLD

VIJAYALAKSHMI RAVIINDRANATH, NEUROSCIENTIST

date only woman director. At present, Raviindranath is the chairperson of the Centre for Neuroscience, Indian Institute of Science, Bangalore.

And on a few major organisations under the ministry of science—the Department of Science and Technology (DST), the Department of Biotechnology and the Centre of Scientific and Industrial Research (CSIR, an autonomous body under the Department of Scientific and Industrial Research). Together they run more than 46 institutes. Till 2000, they had never had a woman director," she recalls. The scientist believes that women are needed in decision-making roles because many help women bring different skill sets to the table. "For example, women like to discuss and work by consensus more than men," Raviindranath explains. "The need to discuss, she feels, is not just a tendency with women, but also important in the field of science." "You need to sound your ideas," she says, adding, "because there are a few women scientists. I have had to suffer from the lack of having a sounding board all my life. Not just in India, but across the world, women scientists are extremely isolated."

Social demands are one reason why many women find it difficult to sustain a career in science, Raviindranath points out. "Figures show that in school, college and till the PhD level, girls keep up with, and often score better than boys. But the age at which one completes PhD is also when women start facing the pressure to marry, settle down and start a family, and that's when we start losing them," she explains. Which is why Raviindranath is very satisfied with the KIRAN (Knowledge Involvement in Research Advancement through Nurturing) scheme announced by minister of science, Jitendra Singh. "Science is a jealous mistress. It demands total dedication. Which is why women need every bit of support that they can get," she says.



Professor Vijayalakshmi Raviindranath. PHOTO BY SUBHATA BHASKAR/HT

## THE MISSING WOMEN OF INDIAN SCIENCE

Despite measures to make the fields of science and technology more inclusive, the number of women in top positions remains low

### Professors Banerjee

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It offers little scope for display of physical prowess or machismo, yet the arena of science and scientific research is as male dominated as the defence or emergency services. Fresh graduates in recent years, may have swelled the ranks of software developers in information technology firms, but when it comes to core engineering and science, campuses, research institutes and laboratories still remain a boys' club, where the few women present are more of an oddity than the norm.

Recently the Ministry of Human Resource Development attempted to correct the imbalance by nominating Pooja Thomas and Vijayalakshmi Raviindranath to the Indian Institute of Technology (IIT) Council, the governing body for all 15 IITs. These are the first women scientists to have been nominated to the council. The union minister for science and technology, Jitendra Singh, also announced a fresh scheme titled KIRAN (Knowledge Involvement in Research Advancement through Nurturing) which will seek to bring girls early in the field of science and technology by creating leadership positions for women. The scheme would look at a mobility mechanism for women scientists who have to change residences due to family compulsions and provide them with flexible employment opportunities. The Department of Science and Technology, one of three major departments under the Ministry of Science (the other two being the Department of Biotechnology and the Department of Science and Industrial Research) already has in place a Women Scientists Scheme.

"Many women scientists suffer a break in their careers because of motherhood and family responsibilities. This scheme provides opportunities to women scientists and technologists between the age group of 30-65 years who desire to return to mainstream science and work as bench-level scientists," explains Dr DR Prasadha Raju, scientist-in-charge at the Department of Science and Technology. Under this scheme, the department offers scholarships for research in basic and applied science, scholarship for research in science and technology-based societal programs and internship for self-employment. Additionally, a mentoring programme has been initiated to improve Ph.D. standards in engineering institutions in which women scientists and their Ph.D. supervisors participated. "Traditionally, social conditioning has not been in favour of seeing women as engineers. In many seats, there is more in the life sciences. In many seats, where engineering institutes

have 40 per cent reservation for women, the number of women studying engineering is more," says Dr Prasadha Raju. The department has also been providing support for six Women's Universities under the CURIE (Consolidation of University Research) for Innovation and Excellence in Women Universities programme since 2000. "We have also started leadership programmes for women scientists, because their numbers are low at the top," adds Raju. The department's Annual Report (2013-14, available on its website, mentions that the department received a total of 1087 plus 300 in Social Research Fellowship) saw proposals from women scientists in this period under the women's empowerment schemes, of which were sanctioned. The numbers look encouraging when seen in isolation. But Dr Jyoti Sharma, principal scientific officer, in-charge, science and technology based Societal & IPR Research Fellowship for Women scientists, reveals that of the total scientific manpower in India today, the percentage of women in full-time employment at research and development organisations is only 17 per cent. Also, earlier only 10 per cent of fresh research proposals received in a year would be from women scientists. Today, after a decade of efforts to empower them, the number has gone up to 15 per cent.

Many complain of a gap when it comes to women scientists who have received prestigious awards. According to figures presented in a paper by Dr Vineta Bal, of the National Institute of Immunology, New Delhi, of the total 97 Shanti Swarup Bhatnagar awardees between 1988 and 2004, only eight have been women. Physicist Rohini Godbole feels the only way to ensure recognition for women scientists and boost their presence at the top is to increase their number at the grassroots level. "We need to stem the leak in early careers for women scientists and realise that the solution to the career-life balance is not only providing ways to come back after a break but to make the passing over the speed breaker for the young ones, manageable," she says.

A 2008 report of the National Task Force for Women in Science had submitted a list of recommendations to attract and nurture talents to women in science. In addition to an annual gender audit, the task force had suggested introducing time-bound recruitment target systems, having women's representation in search and hiring committees and promoting women scientists as science planners and managers. Still, six years down the line, while steps have been taken to make science more women-friendly (the Department of Science and Technology claims KIRAN will cover most of the task-force's recommendations) the glass ceiling is yet to be broken.



(Below) Dr Vineta Bal. PHOTO BY VIKAS KUMAR AND (right) Dr Pooja Thomas. P.F.E. PHOTO



(Below) Dr Vineta Bal. PHOTO BY VIKAS KUMAR AND (right) Dr Pooja Thomas. P.F.E. PHOTO

## 'LITTLE HAS CHANGED IN 10 YEARS'

A large majority of research applicants and marketing people who write to me, address me as sir, even though my name is clearly written in mine one. Often, even colleagues while sending out a group mail, begin it with 'dear sir'. We are not used to having a woman in a senior position in science," says Dr Vineta Bal, sitting in her laboratory at the National Institute of Immunology in New Delhi. Bal, who chose to remain single, to dedicate her full attention to her career, conducted a study to collate the number of women scientists vis-à-vis men scientists at senior and junior positions at government and government funded institutes and the number of women scientists who have received prestigious awards.

"That study was in 2004," she remembers. Bal has also been part of committees set up by the Indian Academy of Sciences in Bangalore and the Indian National Science Academy in New Delhi to review the challenges faced by women scientists and ways to support them. Taking a cue from these committees and propelled by their findings, the govern-

### SHE'S GOT MISSILES IN HER KITTY

Name: Dr Tessa Thomas

Occupation: Scientist at the Defence Research and Development Organisation

Claim to Fame: Thomas earned the moniker Missile Woman and Agni Patti when she became the first woman to head a missile project in India as project director of Agni IV missile

PHOTO BY SUBHATA BHASKAR/HT

PHOTO BY SUBHATA BHASKAR/HT

## 'AT PRESENT ALL GOVERNMENT SCHEMES FOR WOMEN SCIENTISTS ARE AIMED AT HELPING THOSE WHO SUFFERED A BREAK IN THEIR CAREERS AND ARE LOOKING TO MAKE A RETURN.

VINETA BAL, scientist, National Institute of Immunology

ment of India, had also formed a National Task Force for Women in Science, operationalised via the Department of Science and Technology, which after three years of visiting various institutes and reviewing the conditions of women scientists at these institutes had submitted a report, including a list of suggestions and guidelines for the department. "As part of that report, we had also suggested having a gender audit every year. Nothing has been done about that yet. I feel sad when I see statistics from my study being still quoted by people. But barring a few small and no-load studies, no official audit has taken place in these 10 years," says Bal.

The scientist feels however that recent audits, even if conducted, would show little change in the ground realities. "Practically nothing has changed. There might have been one or two women directors here and there, but there has been no marked difference in the situation of women scientists," she says, adding, "However, I am positive. The opening of the Indian economy in the 1990s has meant that in the past 20-25 years, the youth have developed an urge to earn more money. Research is not lucrative enough as a profession for most young

men, which means, more women will be coming in. It offers enough to be a very good second income." To sustain a career in science and do well, however, women need support. "Women's science needs to be showcased. At present, all government schemes for women scientists are aimed at helping those who suffered a break in their careers and are looking to make a return. I feel it would help to support them in a way so that in those crucial years when they are trying to support a family and career, they don't have to take a break from the latter. Options such as flexitasking, for example, should be introduced" she says. For the time being, being in minority also means trying to cope with the majority's bias, however subtle. "Take the example of the prestigious Shanti Swarup Bhatnagar Prize for Scientists. Ever since it was established, only about five per cent of the awardees have been women. The percentage will be slightly more in biology, because there are more women scientists in life sciences, about 20 per cent of the total number. Natural scientists are also more conservative in their thinking than social scientists because they are often isolated from the real world," she says.

# Millennium Post ND 14/09/2014

## P-4

# HRD minister moves to push global ranking of Indian varsities

## OUR CORRESPONDENT

**NEW DELHI:** Worried over poor global ranking of central universities, union human resource development ministry under Smriti Irani on Saturday directed all the central varsities to complete their National Assessment and Accreditation Council (NAAC) accreditation or reaccreditation (as the case may be) as per time frame given by UGC in its Regulation. UGC, the only grant-giving agency of the HRD ministry, will take up the matter with NAAC for opening the regional centers to expedite the process of accreditation, a statement released by the ministry stated.

The press note further said that a working group compris-



Smriti Irani

ing vice-chancellors of English and Foreign languages university, Delhi University, Central University of Gujarat and Jawaharlal Nehru University was constituted for developing a framework for the National Ranking System. The ministry has directed the working group to submit its report within one month.

The minister also asked VCs to encourage the faculty in central universities

to offer free online courses to citizens under the Digital India initiative of SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) through the Massive Open Online Courses (MOOCs) platform created by MHRD through IIT Mumbai.

Stressing on maintaining transparency, Irani also asked all central universities to display all information about the varsity on its website within a period of one month. The varsities told to put details such as profile of teachers, calendar of activity of university, academic calendar, names of members of all statutory bodies alongwith their tenure, research output, information on budget, vacancy, tenure of registrar, finance officer, etc on its portal.

# Professor Debashis Chatterjee steps down as IIM-K director

<http://www.deccanchronicle.com/140914/nation-current-affairs/article/professor-debashis-chatterjee-steps-down-iim-k-director>

Mr Chatterjee, a Bengali who made Kozhikode his base, would go back to his former role as professor of organisational behaviour at IIM Lucknow. The new IIMK director would be decided later by the union government, said a press release by the IIMK.

Prof. Chatterjee during his tenure transformed the IIMK into an institution of national impact and global reckoning. With over 21 years of teaching experience, he has tried to create a hallmark of 'Globalising Indian Thought.' Prof Chatterjee also created history by increasing the enrolment of women up to 54 percent in the flagship post-graduate programme.

Hindu ND 14.09.14 P-12

# A malfunctioning system in need of repair

Rohit Dhankar

**T**he unsatisfactory quality of elementary education for India at the least for the last four decades. Many quality improvement programmes have been devised and implemented at State and national levels; but they all left the quality lower than they found it. The access in terms of children attending the schools has certainly improved. But it is mainly due to increased awareness of parents and mushrooming private schools that cash in on the parental aspirations.

If we really want to improve the quality of education for all, we may have to seriously re-evaluate our notion of quality itself; and match the systemic efforts to achieve what we understand by it.

## The notion of quality

The popular discourse regarding quality today revolves around reports of certain large-scale achievement tests in language and arithmetic like ASER (Annual Status of Education Report) and the world-wide PISA (Program for International Student Assessment) for ranking; even though India does not participate in the PISA. These may indicate an important part of what needs to be achieved, but they also mislead efforts for improvement of quality in education. One, by narrowly focussing and therefore emaciating the very idea of quality; and, two, by creating an impression that one can improve scores in these tests by directly targeting such improvement. Education is a complex affair, the visible achievements often are the result of subterranean processes and belief systems operating in the system.

In efforts to rethink quality we should note that, like everything else in education, quality also has a political dimension. Education systems are geared to larger social purposes. The emphasis on inclusiveness in our education policy needs not only be safeguarded but also be deepened. This political orientation of education is an essential part of quality.

The second aspect of quality are the twin problems in our education system which have been lamented in virtually all committees/commissions

reports and curricular documents since Independence — one, the plague of rote learning devoid of understanding; two, the disconnect between education and life.

The large-scale testing completely ignores both these aspects, and the noise created around the scores takes the attention away from the essence of education. Our education, as it is implemented in the classrooms today, does not provide scope for creativity and independence.

The third, an essential aspect of pedagogy for meaningful education, is the child's right to "meaning making" and confidence in the truth of what is learnt. This confidence cannot rest on the authority of the textbook or the teacher. It has to be cognitively earned by the child through constructing her own justifications for what she learns. In our zeal for teaching everything as fast as possible we bypass the creative processes of justification that makes confidence and relevance possible.

## The political orientation of education is an essential part of quality

The fourth — our pedagogy has to learn to respect the child as a person. Corporeal punishment and insulting behaviour in the classroom are already punishable offences. But respect for the learner as a person goes beyond this. It is acceptance of her individuality and judgement.

Is our education system prepared to take forward quality understood in this larger sense? No. We have to work towards this preparedness. One, we need to create conviction in the political elite, administrative structure and education functionaries to look at education in a broader sense.

We have to face the truth that as a society we do not exhibit concern for providing equal opportunity of good education to all. This would require a large-scale churning in society for consensus-building on this issue. The government, universities and apex institutions like NCERT and NCTE can take a lead in this; and substantial cooperation from media will be required.

Two, we have to recognise the inad-

equacy of our teaching force; both in terms of numbers and preparedness. Most of our teachers are unaware of curricular demands on them and see learning as the capability to repeat what is written in the textbook. This is because many of them are untrained and most of the trained ones have had very bad teacher education. We should refrain from discarding the very idea of in-service teacher education based on our experience of lacklustre implementation of ill-conceptualised programmes in the past.

Three, we need urgently to sort out the mess that is pre-service teacher education today. The debate on this issue has to go beyond duration of B.Ed. courses and who can and cannot teach there in. We have to reconceptualise teacher education which is coherent with our vision of education and educational quality. At the moment there is a wide gap.

Four, at present we have reasonably good curriculum framework. However, it is already about 9 years old and there is no harm in reviewing it. But that review process should neither be motivated by political agendas like bringing in unfounded and ill-understood ancient cultural elements nor by aligning school curricula with higher education and research needs. Every educationist worth his salt understands that rationale of school curriculum rests on building foundations of being human and participation in democratic life. If it is geared to preparing people for IITs, IIMs and goalposts defined by IITs elementary education will lose relevance in life of most of our children and will also fail to reach those very goalposts.

Five, we need a massive programme for education functionaries right from headmasters to the State-level administrators to understand education, educational reform and build conviction that the government can actually do it.

One understands that the above analysis points to massive changes. But then we have an old, malfunctioning system to repair; no one should imagine that it can be done by mere slogans or cosmetic changes.

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Times Of India ND 14/09/2014  
P-1

# Higher education set for an overhaul

TIMES NEWS NETWORK

**New Delhi:** In a bid to create uniformity among central universities, the HRD ministry has decided to frame guidelines for common admission, common curriculum, student and faculty mobility as well as a national system of credit transfers. It has also been decided to evolve a national ranking system for central universities.

These decisions were taken at the two-day retreat of HRD minister Smriti Irani with vice-chancellors of central universities in Chandigarh. A committee comprising VCs of central universities of Kerala, Jharkhand,

## COMMON CODE

► HRD ministry to evolve **national ranking system** for central universities

► Guidelines for **student, faculty mobility** across universities

► Common **admission & syllabus**; uniform **credit transfer** system

Gujarat, Baba Bhimrao Ambedkar University, Tripura, Delhi and Pondicherry University has been set up to frame the norms. The committee has been asked to submit its report within a month.

► 'Great step forward', P 20

## Common curriculum, admission great step forward: HRD ministry

► Continued from P 1

Imagine one university with 39 campuses with seamless mobility of students and teachers. Common curriculum and admission will be a great step forward," an HRD ministry official.

However, there could be practical problems related to implementation. For instance, it is unlikely that faculty from premier central universities like DU and JNU would move to new central universities in places like Motihari or even universi-

ties in northeast. A former HRD ministry official said, "Attempts to have a common admission during Kapil Sibal's term also did not materialize. It remained confined to 14 central universities created in 2009. Old universities did not agree." As for the pro-

posal of single legislation to run all central universities, the ministry has sought opinions of all VCs.

Another committee comprising VCs of English and foreign languages university, University of Delhi, Central University of Gujarat

and JNU was constituted for developing a framework for the national ranking system. It was also decided to operationalize Council of Industry-Higher Education Collaboration to identify initiatives to promote research, develop market-

ready manpower and enhance employability. The Council will collaborate with placement cells of Central Universities for identification of the emerging areas as per requirement of neighbouring industries to make students employment ready.

Asian Age ND 14/09/2014 P-3

# Govt focus on scientific outlook

NITIN MAHAJAN  
NEW DELHI, SEPT. 13

With Prime Minister Narendra Modi asking for augmentation of research and promotion of science amongst student fraternity, the Union human resources development ministry has decided to launch various schemes and make efforts for the promotion of scientific outlook in students across the country.

As part of this initiative, the government has established research groups which will be mandated to identify the

needs of the country in terms of its research and technology requirements in the fields of health, computer sciences, energy, nano technology, defence and environment etc.

The step is expected to enable the country in proper planning for manpower, research infrastructure and allocation of resources.

Leading academic institutions like the IITs and IISc have been identified for the process and the research groups are expected to share their first report by March

2015. The Union human resources development ministry is also planning to involve leading scientists from across the country in teaching at science labs in schools and higher education institutions.

Sources stated that as part of this initiative the government aims to keep the science labs of schools and other institutes open on weekends where these scientists can come and interact and inspire the young minds. This is expected to improve practical training amongst students and move away from rote

based learning as was indicated by Modi after his Japan visit.

The government has also decided to unveil All-India Council for Technical Education scholarships for 1000 candidates for Ph.D in Council of Scientific & Industrial Research and Defence Research and Development Organisation labs.

Sources stated that this step could help the sector seek bright and young students with an inclination towards research and it could go a long way in helping the country.

Business Standard ND 14/09/2014P-1

## Highly educated and ready to mingle? Log on

A slew of websites caters to matchmaking needs of IITians, IIMians and others with high educational qualifications

M SARASWATHY  
Mumbai, 13 September

Akhil Parameshwaran, a 28-year-old Indian Institute of Technology (IIT) graduate with a foreign master's degree, is not averse to his parents' sugges-

tion that he get married to someone within the community. But he has one condition: His life partner must have a similar educational background.

The task proved easier than pie, as a simple search on the internet helped him locate websites that catered specifically to people like him who were looking for partners with high educational qualifications. Parameshwaran has already received two or three proposals from IITians.

Take, for example, Premium Matrimony, whose three founders launched a beta version amid their batchmates from Indian Institute of Management (IIM) Bangalore. The website, which currently has 300-plus profiles, is growing. The founders said non-resident Indian students and professionals formed a significant part of the client base.

The founders said the aim of the portal was to offer a platform to highly educated professionals, especially girls who found it difficult to find grooms of their choice because of the popular obsession for fair, tall and pretty brides, no matter what their educational qualifications.

Same is the case with

IITIMShaadi.com, which was launched in April 2014. Founder Ajay Gupta says the eligibility criteria for opening an account is masters, management, engineering and law degrees.

"Individuals have to send us a scanned copy of their education certificates for final registrations to take place. Right now it is free, but we might look at a fee when we have a sufficient database," Gupta adds.

Since authenticity of information is crucial for websites looking at educational standards as their differentiator, Premium Matrimony goes in for a stringent verification process.

Premium Matrimony says it has been getting profiles of students from marquee global institutes and will soon include all top foreign universities to the regular registration process.

Websites have sprung up for dating, too. DateIITians.com, which has now been relaunched as COGXIO.com, caters to students in around 1,000 top institutes across the world, including the IIMs and IITs. Users get to choose from prospective partners in top companies.

Layak Singh, CEO and co-founder of COGXIO, says there are interactive group platforms that are unique for each institute or company; people can interact privately as well.

Based on interactions and interests over 15 preceding days, the system uses machine learning, big data and psychology techniques to recommend the top five best matches to the user.

"COGXIO allows its users to go for outing, dinner, party, event, movie, adventure or anything that makes their relation more meaningful on the website itself. So, we make them #BEINLOVE forever in real life," Singh says.

Users on these portals don't seem to be complaining. 'Being Jain', a 28-year-old Massachusetts Institute of Technology graduate who would only give his online

handle, says rather than meeting prospective matches offline who might or might not be compatible, he could interact freely with girls from a similar background for a longer period before taking a leap. "Once you are wedded to a wrong match, things cannot be reversed. We at least have the option to interact with several prospects who are well educated, before taking a final decision," he says.

That is music to the ears of these websites.



THERE SHOULD BE A BRIDGE FOR VOCATIONAL SKILLS FOR CHILDREN TO BE TAUGHT IN SCHOOL AND FOR THEM TO MAKE A TRANSITION TO HIGHER EDUCATION... OUR ENDEAVOUR IS THAT WHEN THE INSTITUTES OF HIGHER LEARNING SIT TOGETHER, WE ALSO ENGAGE SCHOOLS TO SEE WHAT CAN BE REFLECTED IN OUR SCHOOL CURRICULUM, WHICH CAN PREPARE CHILDREN FOR THOSE NEWER AVENUES OF EDUCATION THAT WE SEEK TO DELIVER

# CATCH THEM YOUNG

Union Human Resource Development Minister Smriti Irani tells Smriti Kak Ramachandran about her plans for the education sector, including the proposal to review the Sarva Shiksha Abhiyan and the Right to Education Act



ILLUSTRATION DEEPAK RAMACHANDRAN

**Y**ou said the Sarva Shiksha Abhiyan and the Right to Education Act will be reviewed as State governments have raised concerns. What are these concerns?

Instead of enunciating it through a newspaper, the best forum to raise the issue is the executive committee meeting, which is soon to be convened with regards to the SSA, RTE and even the mid-day meal scheme. Our endeavour is to find solutions on those constitutional platforms. Every State has a varied understanding of its own challenges and needs and they are trying to highlight the way forward. Since observations vary from State to State, the best platforms to engage on these issues are the constitutional platforms. We came to power with the spirit of cooperative federalism, and in that spirit to point out just one State or one concern would be inappropriate. We are using these platforms not only to deliberate and debate on issues, but also to look for solutions.

**The government has been flagging the issue of employable youth. What are the plans for improving skill development?**

We are operationalising a council for industry and educational institutions collaboration, which looks at employability, mobilising resources, promoting research and how to have market-ready manpower. Apart from that, through the UGC, we are convening a meeting of education secretaries to help us scale up our skill development initiatives. We are trying to ensure there is a convergence of school education and higher education on that platform. An equivalence framework is also being worked upon.

**The Prime Minister recently said India should aim to export teachers, but the youth is not inspired to take up the profession.**

The wonder of the 5th of September (Teachers' Day) programme was the ability for us to raise an environment of respect towards the teaching community. That dialogue between the Prime Minister and the students directly was envisaged to bring about appreciation for the teaching community. It was a perfect initiative to inspire today's students to become tomorrow's teachers.

Through the Madan Mohan Malviya Teacher's Training programme sufficient financial allocation has been made for scaling up teacher training. Also, my endeavour is to ensure that there is a separate academy for technical educators. If we can inspire students to take up teaching as a profession then the Prime Minister's dream of one day being able to export teachers will fructify.

I met the Ambassador of Sudan and they were appreciative of our efforts in teacher training and they are looking forward to some sort of a collaboration so that we can assist in building capacity of their teachers.

A similar exercise was taken up in my conversation with the representatives from Bhutan. While we are looking at enhancing our own domestic capacity we are also looking at helping other nations in building capacity.

**There is an acute shortage of faculty in IITs, IIMs and the teachers complain of poor**

**working conditions and remunerations.**

There is a programme being undertaken by IIT-Kanpur, 'new faculty, new hope', which seeks to assist those youngsters who have become a part of their faculty and assist them in their research. In order to help us retain that talent within the IIT system, I have reiterated that this particular facet supporting the new talent needs to be widespread. Many concerns will be addressed; IIT-Kanpur and some IIMs have been requested to design such a format so that we can bring in a national formula to address the needs of this talented young faculty.

**There is a view that the government, instead of consolidating, is on an expansion spree; there are many existing concerns like infrastructure inadequacies that have not been addressed.**

I think we are balancing both the consolidation and the efforts to ensure that every citizen in every State has the institution of his or her choice. While we are looking at new institutions announced in the last 100 days, we are also looking at addressing the administrative and infrastructure challenges of our older institutions.

This conversation has already been initiated with the IITs, IIMs, and the ISER. Our endeavour is to address the administrative and infrastructure challenges of our institutions in a time-bound fashion.

**The dialogue between the Prime Minister and the students directly was envisaged to bring about appreciation for the teaching community**

**What is the government's strategy on the Foreign Education Providers Bill that has been pending for years?**

Through our Indianised MOOCs (Massive Open Online Courses) called Swayam, we are engaging on various platforms with institutions from overseas. IIT-Mumbai has initiated a MOOCs with MIT, we are looking through our e-library obtaining resources from international sources, which includes support extended by UNESCO, the U.K., Norway, Israel. So we are looking at various parameters of collaboration with excellent academic institutions overseas as well.

**There's been a surge in the cases of sexual abuse in schools in particular, how will you address this concern?**

I have very strongly expressed my outrage on the issue of sexual violence within educational institutions. While I cannot elaborate on this, I have made a request to another Ministry on how this can be addressed through some administrative initiative, wherein before an institution hires any-

body there can be a check of that person's record, since that request of mine is in the stages of infancy, I would not elaborate upon it. I will speak about it when I finalise the blueprint and the details.

**You said each department was working in silos when you took over. Can you give an example?**

One of my observations was that there should be a bridge for vocational skills for children to be taught in school and for them to make a transition to higher education. That could have been built only if both these departments sat together and drafted a way forward.

I did not want solutions to be arrived at in isolation, so both the secretaries sat together. For the first time, in a meeting of secretaries for school education, secretary, higher education came and gave his suggestions.

Another example is that there are 10 research goalposts that IITs have identified and IIMs were asked to give managerial context to those; our endeavour is that when the institutes of higher learning sit together, we also engage schools to see what can be reflected in our school curriculum, which can prepare children for those newer avenues of education that we seek to deliver through the 10 identified goalposts.

**Has it been difficult to handle the brickbats that came your way?**

When constructive criticism is put forth it is very essential to listen to it. I might not listen to malicious barbs, but I listen to constructive criticism. It helps me to improve upon a policy or initiative. I am more than happy to include any idea, even if it comes in the guise of criticism.

2004-05	2014-15
Money Raised From Education Cess (Rs. cr)	5,010   40,105
Total allocation for education (Rs. crore)	11,063   82,409
External aid contribution to education (%)	12   1
<small>(Source: Budget documents)</small>	
Primary school enrollment (%)	94.27   94.8
Children in class 5 who can subtract (%)	74.26   52.3
Children in class 5 who can read a paragraph (%)	80.94   68.2
<small>(Source: ASER 2007 and 2013)</small>	



Hindu ND 14.09.14 P-12

# The price of learning

India now finances its own education. But are the citizens getting good returns for the investment?

Rukmini S

India has increasingly taken charge of financing its education schemes, but are citizens getting good returns for the investment? The numbers show that the new administration will have its work cut out for it in improving outcomes.

Despite being a long way off from spending the recommended minimum of 6 per cent of its GDP on education (just over 3 per cent in 2014), allocations for the sector have grown substantially over the past decade. The Central government's allocation has grown nearly eight times in the past decade from Rs. 11,000 crore in the 2004-05 Budget to over Rs. 82,400 crore in the 2014-15 one. Two-thirds of the allocation for the sector goes to school education.

For school education, India's flagship schemes are the Sarva Shiksha Abhiyaan, the primary education flagship scheme initiated in 2001; the Rashtriya Madhyamik Shiksha Abhiyaan (RMSA) started in 2009 to tackle secondary education; and the Mid-Day Meal scheme started in 1995 and gradually expanded. Between them, they account for 85 per cent of India's school education budget and are credited with helping the nation achieve universal primary school enrolment ahead of the 2015 Millennium Development Goals deadline.

How does India pay for these big-ticket schemes?

In its first Budget after coming to power in 2004, the UPA introduced an education cess of 2 per cent as a "tax-on-tax" applicable to corporation, income, customs, excise and service tax, in line with a promise made in its Common Minimum Programme. After coming back to power in 2009, the UPA-II added an additional 1 per cent cess for secondary and higher education.

Over Rs 2.3 lakh crore has been collected through the education cess since its introduction, Budget documents for the past 10 years show. This education cess, paid by income-tax payers and consumers of many goods and services, now substantially funds India's major education projects.

In 2014-15, the government will collect an estimated Rs. 33,818 crore through its primary education cess, accounting for over 80 per cent of the amount it will spend on the Sarva Shiksha Abhiyaan and the mid-day meal scheme, Budget documents show.

As tax-payers have become the direct financiers of these education schemes, India's reliance on foreign funding has fallen. Ten years ago, foreign funding agencies accounted for over 10 per cent of India's allocation on education; today that figure is down to 1 per cent, the documents show. The World Bank and the United Kingdom's Department for International Development contributed Rs. 625 crore towards the RMSA this year, and the European Union gave Rs. 225 crore to the SSA. In comparison, the primary education cess will raise nearly Rs. 33,000 crore this year and the secondary and higher education cess will raise over Rs. 6,000 crore, dwarfing foreign aid.

But are Indians getting the bang for their buck? Enrolment may be near-universal at the primary school level, but both teacher and student attendance are low – 73 per cent and 60 per cent, respectively, in 2012, according to a study by Educational Consultants of India. Once past primary school, enrolment falls precipitously to 67 per cent in secondary schools and just 20 per cent for higher education, according to government data.

Most crucially, there isn't yet evidence that children are learning enough in school. According to the National Assessment Survey conducted by the National Council for Educational Research and Training (NCERT), fewer than two out of three students in Class III can read and understand a passage and fewer than two out of three can do simple division. Moreover, the numbers have not got better despite the big spending push, in 2007, the Annual Status of Education Report brought out by the NGO Pratham showed that 25 per cent of rural children in Class V could not do a simple subtraction. By 2013, the figure got worse – now 40 per cent of the children could not subtract one two-digit number from another.



# First global varsity revived after 800 years

**T**ourists, domestic or international, who visit Bihar keep at least one place in their itinerary for sure. That is, Nalanda. They visit the ancient ruins of Nalanda University (NU), ask the guide about all the minute details related to the ancient seat of learning, take awesome pictures and return with some fond memories.

But next time, when they visit the same site, they will have one more place to explore. The modern NU, which has come into being from September 1, thanks to the concerted efforts of former Chief Minister Nitish Kumar and backed by Manmohan Singh-headed UPA government. The modern university has been funded by the Ministry of External Affairs and other Association for south-east Asian nations.

Actually, it all started in March 2006, when the then President of India, APJ Abdul Kalam, while addressing the legislators of Bihar, mooted the idea that since Bihar had the rare distinction of having the first varsity - NU - established in the fifth century - efforts should be made to revive it. Kalam's idea set the ball rolling for its revival. The Nitish regime in Bihar held a special Cabinet meeting and cleared the Nalanda Bill in 2009. The UPA Government cleared another hurdle when it passed the Nalanda University Act in November 2010. Around the same time, the Singapore Government proposed its revival as a symbol that would connect Southeast Asia. On September 1, the new university eventually kicked off with seven faculty members and 11 students.

Though External Affairs Minister Sushma Swaraj will formally inaugurate the university on September 19, teaching has already commenced from a makeshift campus, just 12 km away from the ruins of ancient NU, which was destroyed by Muhammad Bin Bakhtiyar Khilji, a general of Qutbuddin Aibak in the 12th century.

A beginning has been made with just two schools: the school of ecology & environmental studies, and the school of historical studies. "Many more students and faculty members will join us in the coming days and months," said NU Vice-Chancellor Gopa Sabharwal.

She said that the university had been set up as a centre of excellence to impart seamless knowledge to students not confined by boundaries, geographical or intellectual. "Our ethos will be the same as the NU of the yore, but in a modern avatar," she added.

The Union Government has already sanctioned Rs 2,700 crore to raise the residential university which is likely to have seven schools for postgraduate and doctorate students by its scheduled completion in 2020.

The modern centre of excellence is to

come up on a sprawling 443-acre campus, encircled by an 8-km long boundary wall. Till its permanent campus is completed, the NU administration has made a temporary arrangement to lodge its students in a state government hotel where it has hired 40 rooms and three suites for holding classes. "One floor of the hotel is for boys, while another one is for girls. The university will run a mess at the hotel for its students as well as faculty members," said the VC.

The tuition fee for the PG courses has been pegged at Rs 3 lakh per annum, plus an administrative charge of Rs 75,000, besides fee for boarding and lodging. At Rs 3.75 lakh per year, the fees are not cheap, and, therefore, have drawn flak by eminent educationists.

"People will pay that kind of money to go to an IIT or an IIM. But they won't pay it for liberal arts," said a Patna University professor, wishing not to be identified. Apart from the fee which could be a stumbling block in attracting the bright students, NU has been at the receiving end for other reasons too.

"The revival of NU is an important effort. But most members of its governing body are based abroad and hence are unaware of the nitty-gritty of the project," said social scientist Ajay Kumar.

Notably, a governing body comprising Chancellor Amartya Sen, Lord Meghnad Desai, Professor Sugata Bose and academics from Singapore, China and Japan, is responsible for its administration. The earlier avatar of NU, considered to be one of the finest universities in recorded history, and renowned for its connection with Lord Buddha and famous Chinese philosopher Hieun Tsang, is said to be one of the ancient schools of knowledge during the period of 5th to 12th century.

Established during the reign of Kumbh Gupta-I (AD 414-445), NU was arguably the highest seat of Buddhist learning. Spread over in nearly two square kilometres, it had about 1500 professors and 10,000 students. Legend has it that scholars such as Panini and Jivaka studied there.

According to Chinese scholar Hieun Tsang, who was a student and later a teacher at the ancient NU, it was a six-storey building where the staff and students had a free boarding and lodging. Students were not charged any fee but entrance to the university was through an extremely tough entrance test.

The university offered a choice of many subjects - philosophy, astronomy, literature, logic, Buddhism and Hinduism. The university had helped spread Indian culture in many South Asian countries like Tibet, China and Japan.

The NU ruins are a protected monument and a popular heritage site.

**Abhay Kumar in Patna**

## उचित फैसले

राजधानी में प्रदूषण का स्तर कम करने और जाम से निपटने के उद्देश्य से दिल्ली सरकार द्वारा लिए गए फैसले स्वागतयोग्य हैं। ये फैसले राजधानी की इन दो प्रमुख समस्याओं से निपटने के लिए नए सिरे से किए जा रहे प्रयासों के तौर पर देखे जा सकते हैं। ऐसी उम्मीद की जा सकती है कि यदि इन पर ठीक से अमल हुआ तो स्थिति में सुधार अवश्य नजर आएगा। दिल्ली सरकार ने शुक्रवार को ट्रकों के दिल्ली से गुजरने पर पाबंदी लगाने का फैसला कर यह साफ कर दिया है कि जो ट्रक दिल्ली से होते हुए एक राज्य से दूसरे राज्य को जाते थे, उन्हें राजधानी की सीमा के भीतर प्रवेश नहीं मिलेगा। यही नहीं, सरकार सार्वजनिक परिवहन को भी बढ़ावा देगी। इसके लिए शहरी यातायात कोष बनाया जाएगा जिसके लिए सिगरेट के हर पैकेट और शराब की हर बोतल पर एक रुपये का अधिभार लगाया जाएगा। यह सही है कि सार्वजनिक परिवहन को बढ़ावा देने से हालात सुधरेंगे, लेकिन दिल्ली में इसे बढ़ावा देने की बात कोई नई नहीं है। पूर्व में शीला दीक्षित सरकार भी इस पर जोर देती रही है, लेकिन इसे पूरी इच्छाशक्ति के साथ अमल में लाना अब भी एक बड़ी चुनौती बना हुआ है।

वर्ष 2000 से 2010 के दौरान वायु प्रदूषण को लेकर केंद्रीय प्रदूषण नियंत्रण बोर्ड और भारतीय प्रौद्योगिकी संस्थान (आइआइटी), दिल्ली द्वारा किए गए एक अध्ययन में यह बात सामने आई है कि इन दस वर्षों में राजधानी में वायु प्रदूषण के स्तर में काफी वृद्धि हुई है। दोपहिया वाहनों की तेजी से बढ़ती संख्या यहां वायु प्रदूषण में वृद्धि का प्रमुख कारण बन रही है। मौजूदा समय में दिल्ली में करीब 54 लाख दोपहिया वाहन पंजीकृत हैं जो यहां कुल पंजीकृत वाहनों का 60 फीसद है। यही नहीं, राजधानी में पंजीकृत कुल वाहनों की संख्या तीन अन्य महानगरों चेन्नई, मुंबई और कोलकाता की सम्मिलित वाहनों की संख्या से भी अधिक है। ऐसे में यह आवश्यक है कि सार्वजनिक परिवहन व्यवस्था को सुदृढ़ करने पर तत्काल जोर दिया जाए और दिल्लीवासियों को निजी वाहनों का प्रयोग करने के प्रति हतोत्साहित किया जाए। इसके लिए सरकार को लोगों को उनके घर, बाजार और कार्यालय के पास सार्वजनिक परिवहन उपलब्ध कराने की दिशा में पूरी इच्छाशक्ति से प्रयास करने चाहिए। सार्वजनिक परिवहन सुविधाजनक होगा तो इसमें संदेह नहीं कि अधिकाधिक लोग निजी वाहनों का त्याग कर सार्वजनिक परिवहन को अपनाएंगे।

# IIT-Indore's IAC gets rousing start

— By FPJ Bureau, September 13, 2014 01:03 am

<http://freepressjournal.in/iit-indores-iac-gets-rousing-start/>

**Indore :** The Indian Institute of Technology Indore's Industry-Academia Conclave (IAC)-2014 got off to a rousing start, on Friday.

The inaugural day of the two-day conclave saw addresses from nearly 30 senior representatives from top-notch companies in the country.

Representatives of many niche industries like Microsoft, IBM, TCS, Xilinx, Eicher Volvo, National Instruments, Freescale semiconductors, Siemens, Sasken Communication Technologies, Mahindra, Impetus, Cummins, CSC Technologies, CoreEL Technologies and Scientech Technologies would take part in the conclave are participating in the conclave which is aimed at exploring avenues of collaborative research with the support of the companies.

Their year's conclave theme is "Nurturing and unifying the cycle – Technology, Industry and Research."

## **Indore will be made tobacco-free: Collector**

Indore| Indore will be made a tobacco-free city. All the public places of the district will be made tobacco-free. This decision was taken in a district-level meeting chaired by Collector Akash Tripathi here, on Friday. Tripathi said that the Tobacco Control Act would be enforced strictly in the district to make it free from tobacco. Punitive action including penalty would be imposed against those who don't follow the law. If somebody is found smoking at a hotel, bar, wine shop or a mall, the licence of the establishment would be canceled. For this, the cooperation of police and Nagar Nigam would be sought. Tripathi called for continuous programmes to increase awareness about the Tobacco Control Act and special activities in schools and colleges to make people aware of the ill-effect of tobacco.

He asked the officials to make students take the pledge of not consuming tobacco.

It was decided that the sale of psychotropic drugs would be banned from the vicinity of educational institutions. Signboards declaring public places as no-smoking zones will be installed.

## CU's will Have to Follow UGC Time Frame

<http://www.newindianexpress.com/nation/CUs-will-Have-to-Follow-UGC-Time-Frame/2014/09/14/article2430475.ece>

CHANDIGARH: All the Central Universities (CUs) have to complete their NAAC (National Assessment and Accreditation Council) accreditation as per the time frame set by the UGC.

This was decided during the two day conference of Vice-Chancellors of Central Universities, which concluded here on Saturday. It was also decided that the UGC would take up the matter with the NAAC for opening Regional Centres to expedite the process of accreditation. A working group comprising Vice-Chancellors of the English and Foreign Languages University, University of Delhi, Central University of Gujarat and the JNU was also constituted for developing a framework for the National Ranking System. The group will submit its report within one month.

The VCs were told to encourage the faculty in the CUs to offer free online courses to citizens under the Digital India initiative of SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) through the MOOCs platform created by the MHRD through IIT Mumbai.

Also, National E-library has been envisaged as an online portal that will democratise access to knowledge by ensuring that quality content is available in a digital format to all citizens. It will become operational from the next academic year.

It was decided that each Central University will display all relevant information on its website within a period of one month, including profile of teachers, calendar of activity, academic calendar, names of members of all statutory bodies alongwith their tenure, research output, information on budget, vacancy, tenure of Registrar, as well as that of the Finance Officer.

## Smriti Irani attends VCs' meet, but no talks with PU yet

CHANDIGARH: Human resource development minister Smriti Irani, who is in the city to attend two-day vice-chancellors meet, addressed 39 VCs at Hotel Mountview on Friday. However, as was being speculated, there were no talks between Irani and officials of Panjab University. PU vice-chancellor Arun K Grover was not present at the meet. According to sources, Irani addressed the vice chancellors and told them that a ranking system should be worked out for Indian universities, on the lines of the Times Higher Education Rankings which had PU on the first spot in the country.

She also told VCs attending the meet that all varsities should get NAAC accreditation done. The HRD ministry is mulling mandatory accreditation with the NAAC. Rooting for a national online resource library, Irani is also understood to have told VCs that a network should be created to link universities across the country and help students in far-flung areas who can access academic material via the e-library. The HRD minister also spoke about free online courses. Irani also discussed possibility of a single Act for central universities based on A M Pathan committee report. Irani will also be in the city on Saturday, when she will be visiting the BJP office as well.

# Complete accreditation process, HRD ministry asks Central

[http://www.business-standard.com/article/pti-stories/complete-accreditation-process-hrd-ministry-asks-central-114091300905\\_1.html](http://www.business-standard.com/article/pti-stories/complete-accreditation-process-hrd-ministry-asks-central-114091300905_1.html)

Ignoring opposition from some quarters, HRD Ministry has asked all central universities to complete their National Assessment and Accreditation Council (NAAC) accreditation as per UGC regulations.

"UGC will take up the matter with NAAC for opening the Regional Centers to expedite the process of accreditation," said a government statement here today.

So far only 10-12 of the 39 central universities are accredited. Older universities like [Delhi](#) University and new varsities have till now shied away from going through the process due to several reasons.

UGC, governing higher education in the country, had in March, 2013 come out with a notification making it mandatory for all universities to get letters of accreditation within six months from NAAC.

The NAAC is an autonomous body established by the UGC to assess and accredit institutions of higher education in the country.

A working group of vice chancellors has also been constituted to frame guidelines on common admission, common curriculum, student mobility, faculty mobility and a national system of credit transfer.

On the last day of the two-day vice chancellors retreat in Chandigarh, [HRD Minister](#) Smriti Irani today exhorted all VCs -- in wake of sexual harassment of a student in Viswa Bharati University -- to ensure prevention of sexual harassment of students and staff at all costs.

It was also decided to form another working Group for developing a framework for the National Ranking System and submit its report within one month.

The issue of holding a common admission and following a common curriculum was discussed, following which it was decided to set up a working group comprising of some VCs to frame guidelines.

Older Universities such as DU and JNU, who hold their exams separately, are reported to be against a common admission programme. Officials said the issue would be taken up further after the guidelines are framed.

Yesterday, HRD Minister Smriti Irani has discussed a single legislation proposal with the vice-chancellors of 39 central universities to govern all the central varsities and their comments have been sought on the issue.

The Chandigarh meeting came after Irani had held similar interactions with directors of IITs and IIMs.

# Autodesk partners NPTEL to enhance skills of engineering graduates

[http://articles.economictimes.indiatimes.com/2014-09-12/news/53851153\\_1\\_autodesk-revit-us-based-design-curricula](http://articles.economictimes.indiatimes.com/2014-09-12/news/53851153_1_autodesk-revit-us-based-design-curricula)

MUMBAI: Design solutions major Autodesk has partnered National Programme on Technology Enhanced Learning (NPTEL) to enhance access of engineering students to professional 3D design tools, industry-relevant curricula, multimedia and web technology.

NPTEL, a joint initiative by the seven [Indian Institutes of Technology](#) (IITs) and [Indian Institute of Science](#) (IISc), provides eLearning through online web and video courses in engineering, science and humanities streams.

The US-based design, engineering and entertainment software firm signed a memorandum of understanding (MoU) with [NPTEL](#) yesterday, which aims to increase the number of skilled and industry-ready engineering graduates nationwide.

Explaining the rationale behind the initiative, Autodesk Director Field Engagement [Don Carlson](#) told PTI: "India does not lack in supply of graduates, but that of qualified ones with the requisite technical skills and knowledge of industry workflows and best practices to hit the ground running."

This MoU enables NPTEL to offer technical, faculty and industry support to develop industry-relevant educational programmes and certification, he added.

NPTEL Coordinator (IIT Chennai) Mangala Sunder Krishnan said the issue is not with opening more institutions, but with finding qualified faculty in Science, Technology, Engineering and Mathematics (STEM).

"This initiative will help in making available top learning and skill building material to the students. It is the first time that NPTEL is partnering with a multinational to jointly develop curricula around design education that closely reflects industry demands and complements the existing national curricula," Krishnan said.

It helps NPTEL to offer technical, faculty and industry support to develop relevant programmes and certification in science, engineering, humanities, arts, social sciences, law, agriculture and management via ICT tools, he added.

This collaboration builds on the free access that all secondary and post-secondary academic institutions in India have to professional 3D design software from Autodesk via the Autodesk Academic Resource Center, including Autodesk Inventor, Autodesk Revit, Autodesk AutoCAD, Autodesk 3ds Max, and [Autodesk Maya](#).

NPTEL reaches 12 million users globally, 80 per cent of whom are from India, 6 per cent are from the US and the rest are spread out around the world. Within India, students form around 65 per cent of users while teachers form around 15 per cent.

# IIT-B's student satellite in final stages, will hand over to ISRO next year

<http://indianexpress.com/article/cities/mumbai/iit-bs-student-satellite-in-final-stages-will-hand-over-to-isro-next-year/>

Satellite programme 'Pratham', the brainchild of two IIT-Bombay students, is in its final stages of hardware testing.

Initiated in 2007, after a Memorandum of Understanding was signed between the institute and the Indian Space Research Organisation (ISRO), it is the first satellite programme started by students in the country. The satellite, however, missed its launch slot in 2012 owing to several reasons, including lack of manpower, administrative delay and technical glitches.

According to students, the major problem, which significantly delayed Pratham, was that a number of senior team members passed out of college, leading to a lack of quality workforce in 2012. The programme almost went into cold storage with the stakeholders in a dilemma over whether to revive the programme or scrap it. Meanwhile, IIT-Kanpur's nano-satellite 'Jugnu' was launched into space by ISRO in 2011.

"In December 2012, the team was on the verge of finishing their work and almost all the tests were successfully conducted at the ISRO satellite centre in Bangalore. We, however, could not get the launch slot. In the meantime, most of the seniors, who were part of the project, graduated. The programme had seen four project managers between 2007 and 2012. We started contemplating whether we should shut the programme. After a discussion with faculty members, it was decided that there was no point in closing the project as several research papers had already been published and lot of hard work had gone into the initiative," said Shantanu Shahane, project manager, Pratham.

Accordingly, a team of 20 students was selected in April 2013 and trained for the project. A second round of recruitment was done subsequently. "At present, we have a dedicated team of 40, of which around 15 are new and in the process of being trained," he added.

The Rs 1.5-crore project is nearing its end with final tests being carried out at IIT-Bombay. The students are now busy testing the electrical hardware under simulated space-like conditions. The MoU with ISRO has now been extended till March 2016, and the current handover date is April 2015.

Once successfully in orbit, Pratham will record the electron count of the ionosphere, which can be used for tsunami alerts and also to increase the accuracy of Global Positioning System in India. "The project is running as per schedule and by April 2015, the complete satellite will be handed over to ISRO. They will subsequently decide upon a launch date," said Shahane.

- See more at: <http://indianexpress.com/article/cities/mumbai/iit-bs-student-satellite-in-final-stages-will-hand-over-to-isro-next-year/#sthash.JXcDc5j8.dpuf>

September 15

Times of India ND 15/09/2014 P-1

## Gurgaon boy jumps to death at IIT Guwahati

TIMES NEWS NETWORK

**Guwahati:** A first-semester student of Indian Institute of Technology, Guwahati, was found dead on campus on Sunday. Police suspect Tushar Yadav committed suicide by jumping from the fourth floor of his hostel the previous night.

Tushar, a student of electronics communication and engineering, was from Gurgaon. Police said they found a letter in Tushar's room, purportedly written by him to his parents, in which he said he had been suffering from severe depression for the past two months. Prima facie, the handwriting matched Tushar's.

Although it seemed to be suicide, police said they were looking at other angles too. IIT-G authorities ruled out the possibility of Tushar being a victim of ragging. The family said Tushar spoke to his mother hours before his death and sounded normal.

► **Continued on P 6**

## 'He told mother he was fine'

► **Continued from P1**

Labanu Konwar, public relations officer at IIT-Guwahati, said, "We found out Yadav was not in his hostel room last night. His roommate called him on his mobile around midnight but no one answered. His body was found this morning by a canteen worker."

After police informed the parents, Tushar's father Narendra Singh reached Guwahati in the afternoon. A relative who accompanied Singh to Guwahati said the student had called his parents on Saturday night and had spoken normally. "He called up his mother last night and said he was fine," said the relative. "He was down with typhoid a few months ago and he told his mother he was better now."

This is the second case of suspected suicide on the IIT-G campus this year. In March, S M Shoib Ahmed, an MSc maths student from West Bengal, was found to have hanged himself from a ceiling fan in his hostel.



## Financial Express ND 15/09/2014 P-12

### Core engineering streams witness rise in demand

In an effort to better understand the trends this admission season, the leading engineering professional society—the IET—has conducted interviews with six of its academic affiliate and partner colleges across India. The interviews have revealed a resurgence of core engineering streams like civil and mechanical engineering amongst engineering aspirants in comparison to the previously popular choice of IT. “We are happy to note traditional engineering streams are showing higher acceptance and that more female students are taking up core engineering as a choice. This will have a positive impact on India’s engineering ecosystem in the mid to long term,” said Azra Fathima, head of Marketing and Communications, IET India.

# IISc takes up research on jewels with in-built sensors

<http://www.deccanherald.com/content/430888/iisc-takes-up-research-jewels.html>

**How would you like it if a sensor in your diamond ring or locket, could at the press of a button, open a car garage, get your cellphone to play music or even measure pulse rate? This may soon be a reality as research on jewels with in-built sensors and cognitive capabilities, is being undertaken by IISc's Robert Bosch Centre for Cyber-Physical Systems. The project, first taken up by the Centre for Product Design and Manufacturing (CPDM), aims to build a collection of jewels with sensing capabilities. "For instance, with just the press of a button on a ring or locket, say made of diamond, one can put a mobile phone into silent or ringing mode. The ring and locket can also get your cell phone to play music, which can also come in handy when searching for one's misplaced mobile," scholars at the Robert Bosch Centre said.**

There is also a health function that the piece of jewellery can perform. The person who wears it can get his or her pulse rate measured. There can also be exchange of contact information when two persons shake hands, possible when both persons wear a similar piece of jewellery with an in-built sensor. This was demonstrated under the Master of Design (MDES) research programme.

There are other popular functions that jewellery with sensors can perform, such as opening a car garage, switching on music, TV and DVD systems. Then there is the recognition of movement, very similar to the sixth sense technology, made famous by MIT graduate Pranav Mistry. This project was premised on the belief that wearable computing and digital information could act in addition to the five traditional senses. The device has also been described as a name for extra information supplied by a wearable computer, like the device Mistry had built - "WuW" (Wear your World). Going by this, the diamond with a sensor can act as the sixth sense.

The sixth sense technology works with a pocket projector, mirror and a camera, all contained in a head-mounted, handheld or pendant-like, wearable device.

The projector and the camera are connected to a mobile computing device in the user's pocket. The projector projects visual information, enabling surfaces, walls and physical objects around us to be used as interfaces. The camera recognises and tracks users' hand gestures and a software program processes the video stream data captured by the camera and tracks the locations of the coloured markers at the tips of the user's fingers, which are interpreted as gestures. Once done, one can interpret messages that are being conveyed by gestures.

# An unexpected honour

**Suryendu Dutta**, assistant professor, department of earth sciences, IIT Bombay, was one of the recipients of the NASI-Scopus young scientist awards. He shares his research

Being a recipient of the NASI-Scopus young scientist award is an honour that I had not expected. This award is an important recognition for me as a young scientist.

My research has primarily focused on molecular organic geochemistry, particularly, applied to the ancient sedimentary record. At IIT Bombay, I have set up the first organic geochemistry laboratory in a teaching institute in India to characterise extant and fossilised lipids and plant metabolites (metabolic products).

The study of fossilised plant resins from different parts of the world has fascinated me. It indicates the

evolution of life. Applying the concepts of organic chemistry to earth sciences, we pick samples of oil, sedimentary rock and examine their molecules in the lab through gas chromatography mass spectrometry. The outcomes of my research have important implications in hydrocarbon exploration in India.

However, it is not always easy to conduct experiments because it is difficult to obtain research funds in India, especially for young scientists. The Union ministry of petroleum and the central government's Department of Science and Technology, provided a research grant to set up my lab. However, I need more funds to get some so-

phisticated equipment required for my work.

The NASI-Scopus awards attracted around 650 applications from nine different subject categories from premier research institutions across India. Selections were based on citation of published research work, quality and number of publications, nature and uniqueness of research and impact on society.

I have 30 publications out of which 25 are published in international journals. Along with a citation, I have won Rs 75,000, with which I hope to further my research.

There is a realisation that oil and natural gas are limited resources. The rate of our consumption is much higher than production. So, there is a need in India to tap shale gas, a type of natural gas that we have not explored much in India. In the US, more than 30% of energy is produced from shale gas. I hope the government makes policies to encourage research and development in and use of shale gas.



**It is not always easy to conduct experiments because it is difficult to obtain research funds in India**

— As told to Aaditi Isaac

# Engineering our lives

On Engineer's Day, let's ensure scientific temper pervades the consciousness of mankind

AZRA FATHIMA

As we look back and reflect on the last 50 years, it is astounding to note not just the sheer number of engineering breakthroughs but also the quantum of advancements on existing technologies. While I am not an engineer, engineering and technology fascinates me. Here, I pick my favourite engineering marvels and how they have evolved over time.

The space of communication technology perhaps has seen the most visible and tangible evolution. The humble landline telephone has metamorphosed into mobile connectivity with the most amazing capabilities. History of sorts was made when the first portable cell phone call was made in 1973. Now, 41 years later, we are talking to people across oceans on mobile video, taking photographs and WhatsApping them over a mobile device. In just 41 years, the mobile phone has become the undisputed multi-purpose device—one that lets us talk, message, take photos, draw, calculate, bank, book tickets, watch videos, find places, listen to music and much more.

Aviation engineering is another area that fills us with wonderment. Some 111 years ago, Wilbur and Orville Wright completed their first sustained flight with a powered, controlled airplane. And 44 years later, in 1947, the sound barrier was broken. In 1976, Concorde's commercial airline carried 100 passengers at twice the speed of sound. Today, aviation technology is being used in the mighty Bloodhound SSC car to break land speed records at 1,000 mph.

Countless times a day we flip a switch on—whether to light up a room, start a car, use an appliance or turn on a life-saving equipment in a hospital. Electrical engineering—whether from coal, sun, wind or water—gives power for life to go on, while remaining imperceptible to the naked eye. After the first light bulb in late 19th century and the invention of the flashlight in early 20th century, the advancements in electrical engineering have given us the power to work or play uninterrupted—whether day or night. Enjoying floodlit matches is one such benefit. Today, the world is fo-

cus on renewable energy as a means to conserve, sustain and meet the growing needs of the modern world. I read somewhere that 2 billion people still do not have access to electric power. While electricity has been among the greatest engineering advancements of the 20th century, I guess it will be apt to say "more power to electrical engineering in the 21st century".

From the time Sputnik was launched in 1957 and since the first human (Yuri Gagarin) stepped into space in 1961, spacecraft engineering has witnessed rapid evolution. While satellite and spacecraft engineering is highly complex, the number of benefits it offers to civil-



Illustration: SHYAM

ians make us forget the staggering complexities behind these benefits. In fact, one of the most visible benefits to the common man is the GPS (Global Positioning System) that is enabled by satellites circling the globe.

The evolution of the internet, of computers, health technologies, nuclear engineering, automobile and civil engineering in the last 50 years has made gigantic contributions to the progress of mankind.

On the eve of the Engineer's Day, let's ensure that scientific temper pervades the consciousness of mankind across the globe.

*The author is head, Marketing & Communications, The Institution of Engineering & Technology (IET), India*

# Towards a knowledge economy

The education system in our country requires a major revamp from mere governance to effective governance

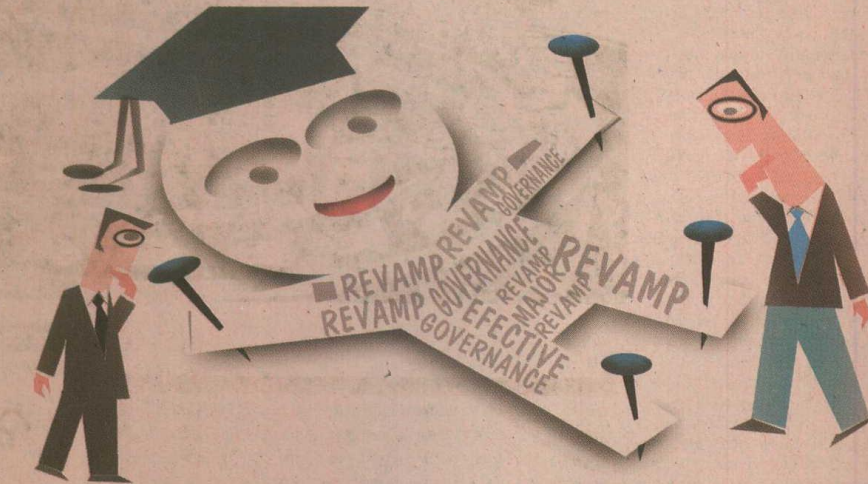
ABDUL SALAM AZ



**K**nowledge and learning are among the key parameters in charting the progress of a nation. With technology growing by leaps and bounds over the last decade, the education sector has had to evolve substantially in order to meet the requirements and challenges of the new world.

Effective governance has been an important element in the Indian education sector, but with changing times, it required an upgrade to e-governance to cope with the new challenges resulting due to technological influences on education. Broadly speaking, the concept of e-governance or electronic governance refers to the use of information and communication technology (ICT) in management or governance, transforming effectiveness, efficiency, accountability and bringing in more transparency in the communication and interaction between the government and stakeholders.

E-governance makes a crucial contribution in monitoring education standards, improving academic systems, effective teacher-student relationships and interactions and analysing their performances. It is more than just the automated face of systems and processes or computerised versions of records. E-governance in education is the solution to several industry ills such as massive drop in student performance, where necessary action has to be taken to boost their performance or that of the teachers who lack motivation.



The education system in our country requires a major revamp from just mere governance to effective governance. The education system, as of today, is lacking in stringent methods or a system that can provide constant monitoring of students and teachers, adequate feedback and communication between the various groups involved, including students, teachers and administrators, proper evaluation of students and teachers, and timely control to improve effectiveness and efficiency. Schools and other educational institutions, especially those run by the government, suffer from high rates of early school dropouts, lack of adequate teacher involvement and an ineffective syllabus. Timely correction will ensure that

**Project Sampoorna—an initiative that successfully implemented the school management software Fedena in over 15,000 government schools in Kerala—allowed principals, teachers and headmasters to track and monitor student activities**

these limitations are overcome and the bar of education and quality standards is raised in the education system of our country.

Biometric technology is one such

useful e-governance tool that uses the face or hand scanning technique to track student and teacher attendance. Using this technology, the problem of low attendance among teachers and students in government schools can be tackled. Considering that e-governance technologies are not expensive to install and maintain, are easy to use and, most importantly, are scalable to suit individual needs and requirements, the government and other stakeholders in the education system should consider the many advantages and benefits of adopting the widespread use of e-governance measures.

Fortunately, the scenario is gradually changing. Although at a slow pace, stakeholders are beginning to recognise the importance and effective-

ness of e-governance and the difference that it can make to the Indian education system. A notable example is Project Sampoorna, an initiative that successfully implemented the school management software Fedena in over 15,000 government schools in Kerala. Initiated in coordination with the Department of General Education of the government of Kerala, it facilitated complete governance of schools, allowing principals, teachers and headmasters to track and monitor all the activities of students with ease and efficiency. Various important processes including preparation of transfer certificates, generating reports related to teachers, students, staff and parents, maintaining scholarship and promotion lists, admission registers, creating an examination database, entry forms for events in schools and several other tasks became easier to handle and implement. In addition to the complete automation of systems and processes of schools, e-governance also has monetary benefits, saving millions every year. Therefore, complete e-governance results in an education system that has better management, an effective academic standard and also carries a huge economic advantage.

Efficient administration of educational institutions can lead to the fulfilment of a long-standing dream of a world-class standard that can put institutions in our country on a global platform, at par with international institutions. The evolving education system and the ever-increasing competitive market demands students who have wide experience and exposure and an educational background that is efficient and effective. E-governance promises to deliver that much and more.

*The author is CFO of Foradian Technologies*

## Financial Express ND 15/09/2014 P-12

### India most affordable for foreign students: HSBC

India has emerged as the least expensive foreign destination for university UG students among a list of 15 countries. Australia, Singapore and the US occupy top three positions in the expenditure chart for overseas students, according to HSBC's survey— *The Value of Education: Springboard for Success*. The average annual cost including university fees and living expenditure of a UG international student in India is \$5,642, of which \$581 is university fees. But at \$42,093 a year, Australia—a popular destination for Asians—is the most expensive option globally, followed by Singapore at \$39,229 and the US at \$36,564. Overseas students need to spend \$35,045 a year for studies and living in the UK. The comparative costs stand at \$12,627 in Brazil, \$10,729 in China and \$9,460 in Mexico. Sanjiv Sud, head of Retail Banking and Wealth Management, HSBC India, said, "Education costs are lower in India because state-run universities are heavily funded by the government and the cost of living is lower here."

Times of India ND 15/09/2014 P-15

# Mystery behind brightest objects in universe solved

**Washington:** Scientists have solved a mystery behind the appearance of quasars — one of the brightest objects in the universe — that astronomers have been puzzling over for decades.

Quasars are super-massive black holes that live at the centre of distant massive galaxies.

They shine as the most luminous beacons in the sky across the entire electromagnetic spectrum by rapidly accreting matter into their gravitationally inescapable centres.

New research from The Carnegie Institution for Science's Hubble Fellow Yue Shen

and Luis Ho of the Kavli Institute for Astronomy and Astrophysics (KIAA) at Peking University solves a quasar mystery that astronomers have been puzzling over for 20 years.

## IN NEW LIGHT

Their work shows that most observed quasar phenomena can be unified with two simple quantities: one that describes how efficiently the hole is being fed, and the other that reflects the viewing orientation of the astronomer. Quasars display a

broad range of outward appearances when viewed by astronomers, reflecting the diversity in the conditions of the regions close to their centres.

But despite this variety, quasars have a surprising amount of regularity in their quantifiable physical properties, which follow well-defined trends (referred to as the 'main sequence' of quasars) discovered more than 20 years ago.

Shen and Ho solved a two-decade puzzle in quasar research: What unifies these properties into this main sequence? PTI

Mint ND 15/09/2014 P-6

# Ganga clean-up mark-III

## OPPOSING VIEW

JAIRAM RAMESH



Respond to this column at [feedback@livemint.com](mailto:feedback@livemint.com)

Not for the first time is the polluted holy river the focus of attention

The prime minister has certainly given the cleaning of the Ganga a huge new momentum. This can only be welcomed but like most of his initiatives, he is repackaging, rebranding and marketing with his unique flair what has been already ongoing for quite some time.

In his inaugural address to the nation on 6 January 1985 as an elected prime minister, Rajiv Gandhi announced a national programme to clean the Ganga. He then launched the Ganga Action Plan (GAP) from Varanasi in July 1986. Over the next two decades, GAP went through two phases on which some ₹950 crore were spent. Without GAP-I and II, the Ganga's pollution would have been significantly worse. In some places actually, water quality measured in terms of dissolved oxygen levels did show an improvement, although fecal coliform levels continued to exceed acceptable limits.

Manmohan Singh was the second prime minister to turn his personal attention to the cleaning of the Ganga. In February 2009, he got the Ganga declared as our national river and established the National Ganga River Basin Authority (NGRBA) under his chairmanship and comprising of the chief ministers of the five main basin states of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal as well as eminent professionals and activists. In 2010, Mission Clean Ganga was started with the objective of ensuring that no untreated municipal sewage and industrial effluents would be discharged into the Ganga. In May 2011, the World Bank approved a grant-cum-loan package of \$1 billion for the mission.

There is a general impression that if we control the discharge of industrial pollutants, the Ganga would become clean very soon. There are 764 industrial units that have been identified along the main stretch of the river and their compliance with effluent standards should be vigorously enforced for which adequate powers are available to the central and state governments. The Kannauj to Varanasi stretch that extends to over 730km suffers the most from industrial pollution. But that alone will not solve the problem in any meaningful manner.

This is because almost three-fourth of the pollution load comes from the inflow of untreated municipal sewage into the river. It is this that needs to be tackled on a gigantic scale. Recognising this fact, the NGRBA sanctioned some ₹6,400 crore worth of sewer network construction and sewage control and treatment projects, of which ₹2,700 crore was for Uttar Pradesh, ₹1,400 crore for Bihar and ₹1,200 crore for West Bengal. Earlier, in GAP-I and II, while the Centre would fund the capital costs of sewage treatment plants, the states and

municipalities were to bear the operation and maintenance (O&M) costs, which was one reason why these plants soon fell into disuse. The NGRBA took a bold decision that 70% of the O&M costs too would be funded by the central government. In another innovation, the capacities of the sewage treatment plants were designed keeping in mind the expected population in the year 2025. Many other steps were taken between 2010 and 2013. The NGRBA declared the endangered Gangetic dolphin as the national aquatic mammal in order to heighten the interest of the younger generation particularly in keeping the river clean. In addition, the NGRBA declared that Mission Clean Ganga means not just cleaning the river of pollutants but also means ensuring a minimum continuous flow of water at all times. This latter aspect has assumed greater importance in the background of a large number of hydel projects envisaged in Uttarakhand. The 100km long Gaumukh to Uttarkashi stretch was notified as a regulated eco-sensitive zone over the strenuous objections of the entire political class of Uttarakhand. The NGRBA also gave the go-ahead for about 250 water quality monitoring stations along the main 2,500 km length of the river. Finally, perhaps for the very first time, all seven IITs (as of then) were brought together by the NGRBA as a consortium with an anchor in IIT-Kanpur, and given the task of preparing a comprehensive river basin management plan. Over 60 reports have been prepared and submitted to the central government along with a draft legislation called the National River Ganga Basin Management Bill, 2013 to ensure that the recommendations are implemented. These are now awaiting further action.

## COLUMN

The unique place of the river Ganga in the shaping of our pluralistic cultural ethos was captured most beautifully by Jawaharlal Nehru in his last Will and Testament drawn up a decade before he passed away. This is what he had written: "The Ganga, especially, is the river of India, beloved of her people, round which are intertwined her racial memories, her hopes and fears, her songs of triumph, her victories and her defeats. She has been a symbol of India's age-long culture and civilization, ever-changing, ever-flowing and ever the same Ganga.... Smiling and dancing in the morning sunlight, and dark and gloomy and full of mystery as the evening shadows fall; a narrow, slow and graceful stream in winter, and a vast roaring thing during the monsoon, broad-bosomed almost as the sea, and with something of the sea's power to destroy, the Ganga has been to me a symbol and a memory of the past of India, running into the present, and flowing on to the great ocean of the future".

It is that spirit that should guide Mission Clean Ganga or Namami Ganga as it is now called. Partisan ideologies with a polarizing political agenda should have no place in this national endeavour. The prime minister should build on what has been accomplished and what has already been initiated so far. He can claim all the credit he wants thereafter.

*The author is a Rajya Sabha MP and a former Union minister.*



# The impact of institutional decay

Krishna Kumar

Starting with the latter half of the 19th century, many Indian students went overseas in pursuit of higher education. Some of them later became leaders of the freedom movement. This trend continued after the turn of the century. Gandhi and Nehru studied in England, Ambedkar went to the United States and Lohia and Zakir Hussain acquired their doctoral degrees in Germany. Even today, we notice that thousands of some of our best students go abroad in pursuit of higher education and never return. Not all of them are driven by the attraction of a foreign degree. Before it brings them better income and status, it is the opportunity to study abroad that provides them a more satisfying experience of learning and research than is available in India. It is not merely the personal consequences of having one's higher education abroad, but also its experience that differs rather sharply from what is available in India.

## 'Politics of waiting'

The gap between our universities and those in Europe and North America began to narrow in some cases by the 1980s, but the 1990s reversed the trend. Established policies were ignored, and a new ideology took over. Even as the industrial policy shifted away from quota-permit-inspection raj, the system of education used precisely these means to regulate the burgeoning private-commercial sector. This attempt met with failure and corruption in all areas of professional higher education, including engineering, medicine and teacher training.

Institutional decay is a common, national story, but its details differ from State to State. Not one of our 700 universities figures in the list of institutions adjudged the best in the world. This list includes not just the American, European, Australian and Japanese universities, but also some in China, South Africa and even Malaysia. India's absence in global educational rankings is usually seen as a national embarrassment, but that is hardly the point. What ought to concern us is the impact that institutional decay has on the young. An Ambedkar, a Ramanujan or a Jagadish Chandra Bose hidden in a young mind today would need an American or a European university to identify and nurture it. Let us imagine that such a young person returns to India after completing a doctoral degree. The first thing

If the new government at the Centre wishes to improve the state of education, institutional recovery will have to be its topmost priority. Other reforms can wait. Universities and undergraduate colleges determine the quality of teachers at all levels from kindergarten upwards

he or she would have to worry about is getting through the National Eligibility Test (NET) organised twice a year by the University Grants Commission (UGC). This notorious test cannot be negotiated without a lot of cramming. Qualifying in it is an essential condition to get the job of a lecturer (now renamed as assistant professor). Even if the young person we are contemplating manages to qualify in the NET, the challenge of getting a teaching position still remains. In all likelihood, he or she will get an ad hoc position, with a fixed salary and no rights or dignity. Ad hoc teachers cannot freely present their views in staff meetings as their contract is to be renewed every four or six months. They usu-

ally teach a lot more than permanent staff, yet they cannot borrow books from a library without a hefty security deposit. An ad hoc appointment can last for years, and it can make the most positive young mind cynical. The "politics of waiting" analysed by Craig Jeffrey in his book on educated unemployment in India is actually quite damaging, both to individuals and to society.

**“The difficulties and delays faced in the process of selection and appointments of teachers have destroyed the careers of tens of thousands of capable young people. Hundreds of universities and thousands of colleges have also been wrecked in the process.”**

ally teach a lot more than permanent staff, yet they cannot borrow books from a library without a hefty security deposit. An ad hoc appointment can last for years, and it can make the most positive young mind cynical. The "politics of waiting" analysed by Craig Jeffrey in his book on educated unemployment in India is actually quite damaging, both to individuals and to society.

## Deprived of dignity

You can find any number of young men and women across the country who have been teaching for years in vulnerable positions known by various names like "temporary," "contractual," "ad hoc" or "guest." They keep waiting for permanent vacancies to be advertised, but in many parts of India, such

pointments so frequently. The difficulties and delays faced in the process of selection and appointments have destroyed the careers of tens of thousands of capable young people. Hundreds of universities and thousands of colleges have also been wrecked in the process.

## Downsizing trend

In both higher and school education, the trend to downsize permanent staff started in the early 1990s. Economic reforms formed the background of this trend. Long before the Fifth Pay Commission explicitly ordered a reduction in posts, the process of recruitment of teachers had either been stopped or drastically modified in many States. Apparently, contractual hiring of teachers and reduction

of support staff were perceived as a convenient means of meeting the fiscal crisis in many States. Once the number of low-paid, vulnerable teachers grew, they became politically useful for rival political parties and union leaders. Both these processes were quite visible across northern India. In Madhya Pradesh, lecturers have not been recruited since 1993. New courses of various types have been launched, and they are being taught by guest or ad hoc teachers. States like Uttar Pradesh, Bihar and Himachal Pradesh have followed this trend. In a puzzling case, Delhi University decided to juxtapose its launch of a new four-year undergraduate course with a tacit ban on permanent appointments. The number of ad hoc teachers in Delhi now stands at the astonishing figure of 4,000. At the school level too, Delhi now boasts of 20,000 guest or contract teachers. But Madhya Pradesh has gone farther than any other State to downgrade its teacher workforce. School staff recruited before the 1990s were declared a "dying cadre," and a new spectrum of low-paid contract teachers replaced it. Political change aroused hope among this new vulnerable cadre, but the policy did not change. Madhya Pradesh was once respected for its robust public system of higher and school education; it now tops national rankings for rape.

## Cultural wealth

Education signifies cultural wealth. This wealth consists of thoughtful minds and an ethos shaped by an exchange of ideas, the reading of books and creative activities. The happiness of teachers forms the centre of such an ethos. By denigrating the teacher, India has damaged what capacity its system of education had for producing and conserving cultural wealth. Decay of libraries has contributed to this process. Schools in our country seldom have libraries, but many provincial colleges once boasted of rich, usable libraries. I recall visiting Allahabad's famous Ewing Christian College as part of an inspection team and discovering to my horror that its famous library had been partitioned. The old collection was locked up; the part accessible to students mostly had guidebooks. Public libraries have also suffered neglect.

The once-prestigious Delhi Public Library is now a shadow of its past glory, with nearly half of its permanent posts lying vacant. Perhaps libraries no more qualify to be a priority in Indian universities and colleges. Adroit planners have endorsed its neglect and shifted the focus to e-resources. These resources are, of course, important, but they cannot substitute the ethos a library creates. In countries ahead of us in education, the maintenance of the library as a special place is regarded as key to inducting the young into a community of knowledge.

If the new government at the Centre wishes to improve the state of education, institutional recovery will have to be its topmost priority. Other reforms can wait. Universities and undergraduate colleges determine the quality of teachers at all levels from kindergarten upwards. No matter where we look, non-appointment has become a culture. Enrolment has increased while institutional capacity has diminished. Even in the richer southern States like Karnataka and Tamil Nadu, commercial and political interests have injured the quality of education. If money has indeed been saved by letting vacancies accumulate or by filling them cheaply and by cutting down support staff, this kind of saving has incurred a big price. What has India gained by doing this kind of saving? It has weakened the already limited capacity the system had for serving children. Had Dr. Radhakrishnan — whose name we invoke to honour the profession of teaching — been alive, he would have been startled to see how the nation has treated its teachers.

(Prof. Krishna Kumar is professor of education at Delhi University and a former director of NCERT.)

Times of India ND 15/09/2014 P-15

# New type of human stem cell made in lab

**London:** Scientists have created a new type of human stem cell in the lab which they believe will be better at making replacement organs than existing stem cells.

In theory stem cells can develop into any kind of cell, so they could be used to repair damaged organs or even build them from scratch. But most stem cells are not that flexible, researchers said.

The best ones are 'pluripotent', meaning they can turn into anything. Such cells have to be taken from embryos or made by reverting adult cells to their embryonic state, called induced pluripotent stem cells, 'New Scientist' reported.

But these pluripotent stem cells still carry genetic baggage from their previous existence.

"This [baggage] has been one of the confounding problems in this area," said Austin Smith of the University of Cambridge, who led the team that developed the new cells.

The new cells have had their cellular memories wiped clean. Their genes have been cleansed of most

© Andrew Brookes/Corbis



**'BETTER THAN EXISTING ONES'**

methylation markers, so they behave more predictably and transform more consistently into other tissues.

The team hopes that this will make them a better building block for organs and tissues than existing embryonic stem cells.

"Nothing has been written or drawn on them to tell them what to do or become. These cells could be a better and more pristine starting point," said Smith.

Called naive stem cells, these have long been known in mice and rats, but they have never been found in humans. PTI

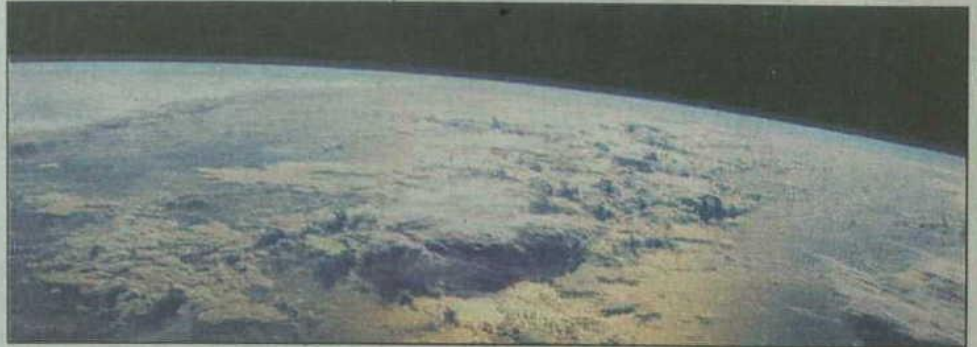
Times of India ND 15/09/2014 P-15

# New project aims to send 1 of every 50k applicants to space

Padmaparna.Ghosh@timesgroup.com

Did Gravity make you want to don a space suit and lift off? Then here is your chance to be George Clooney/Sandra Bullock. Or rather, a "better" chance. Currently, the odds of having been to space are approximately one in 12,928,440. However, a new programme by Spaceship Earth Grants (SEG) is going to bring the odds down to at least one in 50,000 people to experience space. The programme is in the form of a contest that will crowdfund an open number of spaceflight awards.

SEG will initially award one space flight for each 50,000 applications, but will increase the number of awards given per 50,000 applications as the number of applicants grows. This approach of offering



**OUT OF THIS WORLD:** The SEG programme will be in the form of a contest

ever-increasing odds is meant to encourage applicants to share the contest opportunity enthusiastically among their family members, friends and communities worldwide, knowing their own chances of being selected increase as the more people apply. The contest is presented by the Star Harbor Space Training Academy (SHSTA).

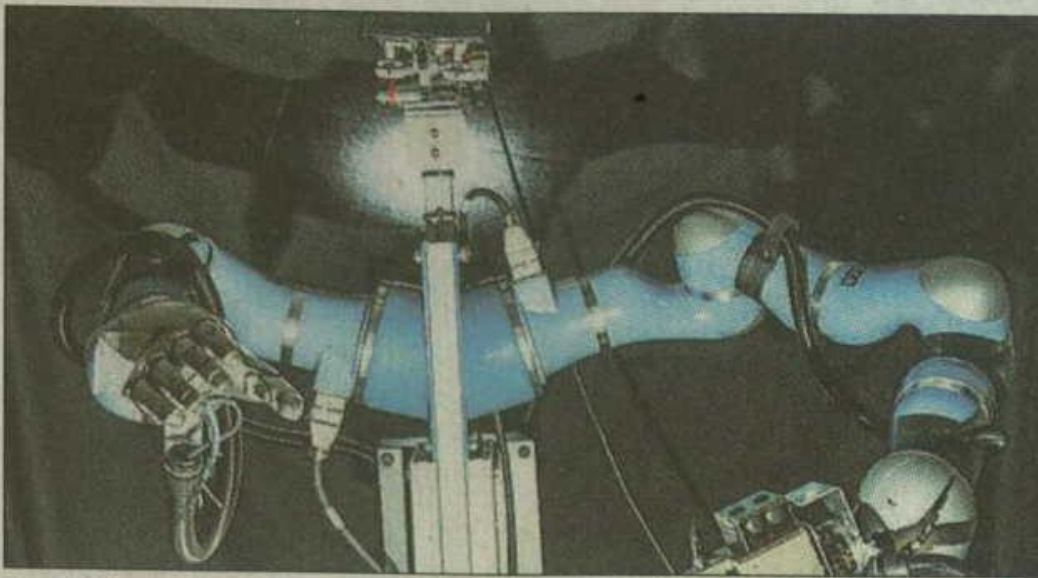
"Space is thrilling; however,

this is not just about creating thrill rides for people. There are aspects of spaceflight that can generate shifts in perspective to positively and profoundly influence the way people behave and think about our world," said former NASA Astronaut Leland Melvin, President of Spaceship Earth Grants.

*For the full report, log on to [www.timesofindia.com](http://www.timesofindia.com)*

Deccan Herald ND  
15/09/2014 P-12

# Hire this robot to wash dishes!



**Boris in action.** PIC: UNIVERSITY OF BIRMINGHAM

**LONDON, AGENCIES:** Tired of housemaids' tantrums? Soon try this robot who can load dishwasher for you.

Developed by scientists at the University of Birmingham, "Boris" is capable of intelligently manipulating unfamiliar objects with a human-like grasp.

The robot sees objects with depth sensors on its face and wrists.

In 10 seconds, it calculates up to a thousand possible ways to grasp a novel object with its

five robotic fingers, *BBC* reported. It then plans a path of arm movements to reach its target, avoiding obstructions.

"He sees something, he has been trained to grasp an object in a particular way, and he says — okay this surface looks similar to what I know, so I can go for this grasp," explained its developer Maxine Adjigle, a research engineer at the University of Birmingham.

"Boris" was unveiled at the British Science Festival last week