

Newspaper Clips

October 5, 2010

Times of India ND 05/10/2010

p-1

La Martiniere principal held in suicide case

1st Arrest For Corporal Punishment

TIMES NEWS NETWORK

Kolkata: In the first such arrests in the country, police in Kolkata on Monday picked up the principal of the city's famous 175-year-old La Martiniere for Boys School and three other teachers and booked them for handing out corporal punishment to a student, who later committed suicide. Sunirmal Chakravarty and the three others were later freed on bail.

Corporal punishment was declared illegal by the Supreme Court in 2000 and the government has said beating kids in schools has no place in a teaching system focussed on reducing stress and enhancing analytical skills.

As the government has dithered on enacting a specific law, teachers have continued to lean on the cane. But few expected premier institutions like La Martiniere for Boys to condone the practice which came to light after Rouvanjit Rawla, a Class VIII student, committed suicide at his home on February 12, four days after he was caned.

The 13-year-old's suicide shocked the city, setting off a clamour for action against the school which initially refused to even allow police officers dealing with the suicide to meet teachers.

On Monday, detectives rounded up principal Chakravarty, head of the middle school L G Gunion and two other teachers, David Ryan and Partha Datta, before day-break and produced them at the chief metropolitan mag-

City Principals React

Corporal punishment dehumanizes the child but arresting teachers is not the answer to the problem.

AMEETA MULLA WATTAL
SPRINGDALES SCHOOL, PUSA ROAD

If the police have taken stern action, it can't be wrong. A principal has to be answerable for teachers' actions.

ABHA SEHGAL
SANSKRITI SCHOOL

I can't comment if the action is adequate or not. But when the law says that corporal punishment is wrong, we completely agree with it.

ADITI MISRA | DPS GURGAON

» REPORT: P 5

istrate's court. The cops wanted to book them for abetting suicide but the court disallowed that charge for lack of evidence.

The teachers were booked under sections 323 and 324 of IPC that relate to "voluntarily causing hurt" by a dangerous weapon or other means, section 352 of IPC pertaining to use of criminal force, and section 23 of the Juvenile Justice Act, invoked against acts of cruelty by the custodian, in this case teachers.

New GRE to focus on real-life skills

By Sangeeth Sebastian

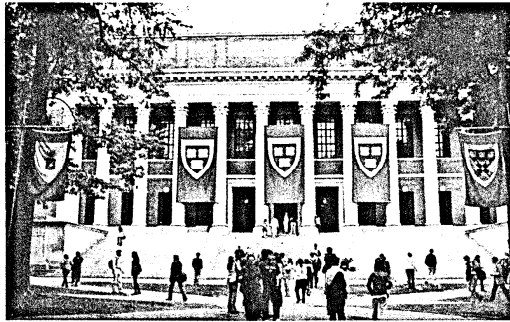
CANDIDATES ASPIRING for higher studies at various US universities will have to appear for a revised Graduate Record Examination starting August next year.

The revised test promises to be a friendlier and technically more advanced version providing candidates with even more reliable results and fairness.

According to a statement issued by the GRE officials, the test has been redesigned to be more aligned with the skills, which the students need to be successful in today's graduate and business schools.

For instance, there will be new types of questions in the verbal and quantitative reasoning sections; many of them featuring real-life scenarios that reflect the kind of thinking students will do in today's demanding graduate and business school programmes. The test will offer a candidate friendly experience without getting tougher like the ability to review and preview questions and the addition of an onscreen calculator.

In the verbal reasoning section, antonyms and analogies have been removed. The examination will now test your ability to interpret, evaluate and reason from what you have read. In the quantitative section,



The revised format will offer a friendly experience so that candidates can fulfill their dream of studying in a US university such as Harvard (above)

more focus has been placed on data interpretation and real-life scenarios with multiple choice and numeric answers. To reduce emphasis on computation, candidate will be able to seek the assistance of

an online calculator. In the analytical section, instead of writing an essay from a choice of topics, candidates will be asked to write an essay on a specific subject. The test preparation material, which is available

WHAT TO EXPECT

► The revised GRE test is more aligned with the skills that students require to be successful in today's graduate and business schools.

► The examination will offer a conducive experience to the candidates without getting tougher. They get a chance to review and preview the questions, besides having access to an onscreen calculator.

► The time for the revised test is 3 hours and 45 minutes in addition to short breaks.

online at <http://www.ets.org/gre/revisedgeneral/prepare>, includes 'Powerprep,' a downloadable programme, which allows test takers to move back and forth and change answers within a section. There will also be sample questions for verbal, quantitative and analytical sections of the test.

The total testing time for the computer-based revised test is around three hours and 45 minutes, apart from short breaks.

To make the entire process attractive to the candidates, organisers are offering a limited 50 per cent discount on the test fee to all individuals who take the GRE revised General Test between August 1 and September 30. So how should a candidate go about registering for the revised GRE? If the student needs a score report before November 2011, they must take the current GRE. Registration for the revised general test will begin on March 15 next year.

The revised test has already caught the fancy of the students, with a significant increase in the number of visitors to the GRE website, as per the officials.

Some of the steps taken by the Educational Testing Service, which conducts the test, to ensure fairness include involving minority educators and representative committees in every phase of development and scoring processes, multiple fairness evaluation by trained reviewers and routine analysis of test questions, among others.

Victoria has 10 Ph.D. schols for Indian students

By Kunal Doley

PROVIDING research opportunities for Indian students to study at some of the leading universities in Victoria, Australia, will be the highlight of a joint collaboration between the two countries announced at Melbourne recently.

Titled 'Engaging India,' the four-year programme announced jointly by John Brumby, Prime Minister of Victoria, and Jacinta Allan, trade minister, will see ten postgraduate Ph.D. scholarships being provided to Indian students to study at Victorian universities.

It will be the first country-specific programme for Ph.D. scholarships and Indians will benefit from the \$1million opportunity to study at world-renowned universities, said Geoffrey Conaghan,

AUSSIE BALM FOR INDIAN STUDENT COMMUNITY

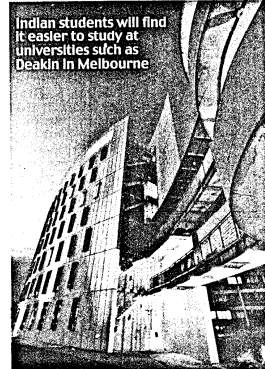
- Victoria has nine universities. The earliest to offer degrees, University of Melbourne, enrolled its first student in 1855.
- The largest, Monash University, has nearly 56,000 students on its rolls, which is more than any other Australian university.
- Both University of Melbourne and Monash are ranked high among the world's best universities. You must have fairly high scores to gain entry into these universities.
- The number of Indian students enrolled in universities in Victoria, of which Melbourne is the capital, has dropped by 30 per cent from the previous year's level in the 2009 session.
- The Australian state's recent generous gestures aimed at Indian students, therefore, are seen as a healing balm.

Victoria's Commissioner to India.

"The programme will also see support for vocational education exchange scholarships for students from Karnataka,"

said Conaghan.

Meanwhile, a Chair in Contemporary Indian Studies at the Australia India Institute, Victoria, has also been started.



Indian students will find it easier to study at universities such as Deakin in Melbourne

The Institute will now receive an additional funding of \$500,000.

The position will be the first in Australia with a multidisciplinary focus on contemporary India. The person who is appointed as the chair will participate in academic visits, research projects and act as a focal point for the education of Indian students in Australia, Conaghan added.

"This is a very positive move towards strengthening the quality of research. It will also provide a structure to existing research partnerships in India developed by Deakin University with the likes of Indian Oil, BIOCON, Tata Steel and CCMB, among others," said Ravneet Pawha, country director-India, Deakin University, which has campuses in the coastal cities of Geelong, Melbourne, and Warrnambool, Victoria.

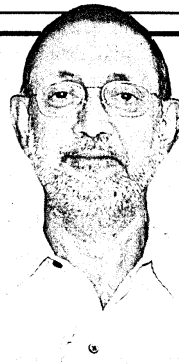
The new engagement will also ensure the setting up of a 'Super Trade Mission' - featuring more than 200 Victorian companies with a mandate to increase investments and jobs in the country.

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Education Mail
DISCUSSION
FORUM



RAMESH SHARMA



Our universities today, either in the private or public sector, are highly regulated. An attempt to create universities or transform existing ones with a focus on research and innovation is an option that the system must have.

B.N. JAIN, Vice-Chancellor, BITS Pilani

Universities must have a place for the next big idea

At the moment, we need institutions that can offer multidisciplinary research. By starting innovation universities we are expanding higher education; there will be a systemic movement. We will also discover new ways of doing things in the process.

P. RAJENDRAN, Director and Chief Operating Officer, NIIT

Do innovation universities mean the end of the higher education system as we know it? Academic visionaries share their views

By Sangeeth Sebastian

EMINENT SCIENTIST Professor Yash Pal has expressed his reservation on innovation universities at a meeting of experts called by the Union

Ministry of HRD (MHRD) recently. The scientist was of the view that the plan in its current form could destroy Indian higher education. Coming as it does from an educationist who is the architect of the United Progressive Alliance's education reform, Yash Pal's words assume significance. Will innovation universities, actually spell the death-knell for our higher education system? Leading educationists share their views.

"The concept of innovation universities is only at the stage of discussion now. At this stage both positive and negative suggestions should be welcomed," said P Rajendran, director and COO, NIIT. According to him, the word 'innovate' means leading new type of research. "We need institutions that can offer multidisciplinary research. By starting innovation universities we are expanding higher education, there will be a systemic movement. We will also discover new way of doing things in the process," said Rajendran.

Announced by PM Manmohan Singh, innovation universities are envisaged as centres of excellence that will focus on interdisciplinary research on selected sub-

INNOVATION UNIVERSITIES

- 1 Innovation universities are envisaged as centres of excellence that will focus on inter-disciplinary research on selected subjects.
- 2 They promise to expand higher education and research in association with the corporate sector.
- 3 There's a need for a change in the structure, regulation and status of existing universities, which had been set up decades ago, say experts.

jects without administrative interference or other red-herrings usually associated with universities.

An aspect opposed by the former UGC chairman in the MHRD meeting. The fact that innovation universities are exempt from scrutiny of Comptroller and Auditor General and that there will be freedom in academic and administrative matters, makes these institutions vulnerable to be misused, said Yash Pal.

V.S. Rajasekhara Pillai, V-C, IGNOU, begs to differ. "We need universities of a different kind. The government alone cannot be expected to finance all institutions," he said. "The new structure of innovation universities will involve participation from the corporate sector. Only by permitting independent initiative can we expect auton-

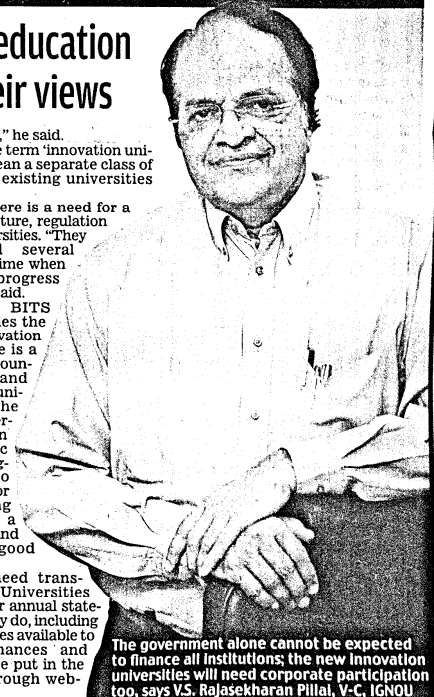
omy and excellence," he said.

As per MHRD, the term 'innovation universities' do not mean a separate class of universities, even existing universities can aspire for it.

But Pillai says there is a need for a change in the structure, regulation and status of universities. "They were formulated several decades ago, at a time when the indicators of progress were different," he said.

B.N. Jain, V-C, BITS Pilani, too welcomes the move to start innovation universities. There is a clear need in the country for research and innovation in the university system, he said. "All our universities today, either in the private or public sector are highly regulated. Attempt to create universities or transform existing universities with a focus on research and innovation is a good one," he said.

"But then we need transparency as well. Universities should declare their annual statement. Whatever they do, including curriculum, resources available to the students, finances and tuition fees must be put in the public domain through websites," added Jain.



The government alone cannot be expected to finance all institutions; the new innovation universities will need corporate participation too, says V.S. Rajasekhara Pillai, V-C, IGNOU

LAST-MINUTE PREP TIPS TO BE CAT SAVVY

Barely three weeks are left for the most prestigious management entrance test. Here's how you can make the optimum use of the time you have on hand.

A candidate should take at least one mock test every three days. Testing without analysis, however, is of no use. Spend a day for testing followed by a day of serious analysis and revision.

R. SHIVA KUMAR, Director, Academics, Career Launcher



You need to be comfortable when you're using the mouse and keyboard. At the same time, don't think you'll need to be a computer wizard to crack online CAT. You'll need minimum skills to do it.

SANDEEP MANUDHANE, Chairman, PT Education



By Kunal Doley

AFTER THE initial glitches that plagued the first phase of the inaugural computer-based Common Admission Test (CAT) last year, the countdown to this year's edition has already begun.

A total of 2.41 lakh students had applied for CAT in 2009. Though 2.16 lakh candidates appeared for the test, nearly 10,500 students could not take the exam in the first phase due to virus attacks and hardware problems. They were forced to opt for a re-test in the second phase of the exam.

This year, CAT will be conducted from October 27 to November 24. Candidates can take the test during a time frame of 20 days allotted to them. However, for those who are still wary about the new online format, experts are of the opinion that there's actually nothing much to worry about it.

"Last year's data suggest that the change in pattern has become more comfortable to the students," says R. Shiva Kumar, director-academics, Career Launcher. "But despite the fiasco doing the rounds, students who were at ease with the new testing environment did not have any problem whatsoever," he says.

Practice will be the key, says Sandeep Manudhane, founder chairman, PT Education. "Now that the CAT has been online since 2009, you need to acclimatise yourself to a computer-based testing environment. You need to be comfortable



Relax, you need not spend too much time on studying now – three to four hours daily should be good enough.

ANKIT GARG, PGDM Student, IIM Calcutta



Mark out your areas of strength and leaving the areas of weakness. You can come back to them later if you have the time.

AYUSH KEDIA, PGDM Student, IIM Calcutta

The Common Admission Test (CAT) is just three weeks away. This is not the time to step up the number of hours you invest in your preparations; instead, it's time for consolidation and tackling grey areas that may give you trouble.



HOW TO GET GOING

- ☑ Check your eligibility for CAT 2010 on www.cattim.in.
- ☑ Purchase a CAT 2010 voucher from a designated Axis Bank branch before registration.
- ☑ To register online, log on to www.cattim.in and click on the 'Register for CAT 2010' link.
- ☑ During registration, you will need to: a) create a profile; b) fill out the CAT application; and c) schedule your test.
- ☑ Estimated time to complete this process is 20 to 30 minutes.
- ☑ Before you start, gather the information you will need to complete the registration, including your voucher, education record, work experience, and the list of the IIM programmes to which you are applying.

EXAM PATTERN

- » The duration of the test is two hours and 30 minutes, including the initial 15-minute tutorial.
- » No breaks will be given in between.
- » The test has three sections. Altogether, it has about 60 questions in the test. The number can change.
- » At the test venue, you'll be seated at a desk with a computer terminal and provided with a scratch paper for calculations.
- » After the test, you must leave the scratch paper at the desk. Rough work cannot be done on any other paper/sheet.

CONQUERING CAT



DATES TO Remember

Sale of CAT Vouchers	Test Dates
Over	Oct 27 to Nov 24
Registration for CAT 2010	Results
On till Oct 7	Jan 12, 2011

TEST SITES

New Delhi

- » Asia-Pacific Institute of Management Studies, Mathura Road
- » Asia Pacific Institute of Management, Institutional Area Jasola Vihar
- » Delhi Business School, Mathura Road
- » Delhi School of Professional Studies and Research, Rohini Phase-III
- » Guru Nanak Institute of Management, Punjabi Bagh West
- » Institute of Marketing Management, Qutub Inst Area
- » KR Mangalam Institute of Higher Education, Greater Kailash-I
- » Periyar Centre, Institutional Area, Jasola

Noida

- » Jaipuria Institute of Management, Sector 62

Greater Noida

- » Ganesh Lal Bajaj Institute of Technology and Management, Knowledge Park III
- » Graduate School of Business and Administration, Sector-ALFA2

Gurgaon

- » Everonn Kompas Centre, Sec-14
- » Institute of Business Management & Research, Sec-33
- » World College of Technology and Management, Farukh Nagar

QUINTDOWN STRATEGIES

- » Solve CAT papers regularly. Previous years' CAT papers are useful to the extent of helping your practice. But you can also crack CAT-equivalent papers.
- » Review the paper that you solve. This is an important step that people seem to miss. It is important to solve papers but you must also review them later.
- » Understand your strengths and weaknesses. By this point in time you must be familiar with your strengths and weaknesses. It is more important to spend time understanding your strengths and weaknesses rather than trying to learn new things at

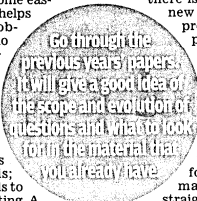
this stage of your preparations.

- » Study in moderation. People tend to step up the number of hours they put in to be able to cram in as much as possible during the last one month. But what may work better is to slow down in the last one month and focus more on consolidation.
- » Relax on the day before the exam. Be prepared for the pressure next day. Don't exert so much that you get to the point of tiring yourself mentally or physically.
- » Practise relaxation techniques like meditation and deep breathing. It's not about

which technique you use but the result you seek to achieve.

- » There is no magic wand that works for all. The journey is one of self-discovery. Some strategies may work for you, some may not, and some other may not but still help you find out what works for you.
- » Believe in yourself. If you don't have the confidence to crack the CAT and make it to the IIM of your choice, you'll never be able to do well. Keep telling yourself that you'll do it.

— By Sandeep Manudhane
Founder Chairman, PT Education



work on your strengths, says Ankit Garg, another student of IIM Calcutta who took the test last year. "Relax and muster all your confidence now. You need not spend too much time on studying now – three to four hours daily is good enough. Prepare your own strategies," explains this native of Chandigarh. It is not a time to get psyched out, says Kedia. "It happens to most people. The plan should be to divide the time according to your needs. Make the areas which you are strong at, stronger, while leaving out the weak areas. You can come back to them once you are through with your core areas," he says.

Do not try to study anything new. "If there is an urge to learn anything new then it must be practicing previous years' CAT question papers. This is good enough," says Shiva Kumar.

Also, don't ignore the 15-minute 'demo' before the exam, adds Shiva Kumar. "Make sure that you go through it – it does not matter how much you are acquainted with the mock tests in the computer-based formats. Many students made the mistake of going straight to the test without going through the demo last year. It will also help you to cool down your nerves a little bit," he says.

There is no silver bullet or a magic stick that works for all. It's a journey of self-discovery. Some things which you follow may work for you at the exams, some may not. But the important thing to realise is what ticks for you and what does not, says Manudhane.

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'Teach the teachers, do not arrest them'

Principals Oppose Arrest Of La Martiniere Staff

Neha Pushkarna | TNN

New Delhi: The arrest of the principal and three teachers of La Martiniere School for Boys, Kolkata may have been a step towards justice for the victim of corporal punishment, but educationists in the city are not sure if the move will help set an example. According to principals, putting teachers behind bars will not root out the problem. It may instead discourage youngsters from taking up school teaching as a profession.

Rouvanjit Rawla, a 13-year-old student of La Martiniere, had committed suicide in February this year after he was allegedly caned by the principal. Seven months later, Kolkata police arrested principal Sunirmal Chakravarti and three teachers — Garnian, Partho Dutta and David Raun — and released them on bail on Monday.

"Corporal punishment dehumanises the child but arresting teachers is not the answer to the problem. There can be a more holistic, balanced and mature way of addressing the issue of corporal punishment," said Ameeta Mulla Wattal, principal, Springdales School, Pusa Road. She added, "They were released on bail later. So what was the arrest supposed to convey? This will further bring up many issues. People will react to it in a strange way. It can also be used against teachers. There is a need for more debate and discussion on the issue."

Teachers say corporal punishment is unacceptable and is gradually waning off in schools. But the arrest of the principal and teachers of such



Neelabh

Corporal Punishment

Possible actions under law

- ▶ Disciplinary action under Section 17 of RTE
- ▶ Two-year imprisonment under Section 23 of Juvenile Justice Act
- ▶ One-year imprisonment or a fine of Rs 1,000 or both under Section 323 (voluntarily causing hurt) of IPC
- ▶ Three-year imprisonment under Section 324 (voluntarily causing hurt by dangerous weapons or means) of IPC

a historic and elite school has certainly left them shocked. Feroze Bakht Ahmed, who teaches at Modern School, Barakhamba Road, said, "Loss of life is unacceptable but arresting the principal and teachers is like stretching things too far. The fact that the child went to the extent of killing himself means the school was not able to inculcate the right values in students." Bakht added that schools should revive moral science education and train the teachers.

A few like Abha Sehgal, principal, Sanskriti School, said corporal punishment was no less than a criminal offence as it completely de-

stroys the psyche of a child. "If the police have taken a stern action and a strict view of the problem, it can't be wrong. It's the responsibility of the principal to monitor and train the teachers. Enough counselling and workshops should be conducted so that any aberration is detected in time. A principal has to be answerable for teachers' actions," she added.

Aditi Misra, principal, DPS Gurgaon, suggested schools should counsel any disturbed child and talk to him if he goes wrong and that is what La Martiniere should have done. "I can't comment on whether the action against the principal and teachers is adequate. They wouldn't have imagined their action could lead to this. But when law says corporal punishment is wrong, we totally agree with it," said Misra.

Unlike academicians, child rights activists see the arrests as a deterrent. Ashok Aggarwal, advocate and founder of Social Jurist, said, "It's an unexpected but remarkable action. It should act as a deterrent for teachers who do not hesitate raising their hand on a child. Government should now work to make corporal punishment a criminal offence in law."

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New panel to probe auction of irradiator

TIMES NEWS NETWORK

New Delhi: There is still time before Delhi University takes any action against the officials responsible for the auction of gamma cell to scrap dealers in February this year. DU will now constitute another committee to act on the report of the inquiry committee that was submitted more than two months ago.

In a special meeting of the executive council (EC) on Monday, it was reportedly decided that vice-chancellor, professor Deepak Pental, will be authorized to form a three-member sub-committee of the EC to examine the report and fix the responsibility. According to a statement released by DU registrar, it has also been decided not to give any administrative post or assignments to the officials of chemistry department who have been named in the inquiry committee report.

A few EC members insisted that VC decided on constituting another committee without any debate. EC member S C Panda said, "Five of us were protesting outside meeting venue. We were trying to stop the VC from going inside as he has already completed his term and cannot continue in office without President Pratibha Patil's permission."

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HC quashes FIR against DU professor

TIMES NEWS NETWORK

New Delhi: In a relief to Delhi University professor, the Delhi high court has quashed an FIR registered against him accusing him of molestation.

Justice S N Dhingra put an end to the proceedings against the accused, Bidhyut Chakraborty, saying he didn't molest or threaten the victim. Chakraborty, who was working as an honorary director on deputation in Gandhi Bhawan, was accused of molesting an employee. Subsequently, the police filed an FIR.

Once the probe got over, a chargesheet was filed in the court which revealed the IO conducted several inquiries with different staff members of Gandhi Bhawan and outside to find out the truth. He submitted in the chargesheet that not even one witness was found who could support the allegations levelled by the victim and said no evidence could be found against the professor.

However, keeping in view the complaint made by the victim, the IO left it to the court to issue summons to Chakraborty if needed.

HC was surprised to note that despite no evidence, the police was reluctant to file a closure report. It turned its attention to the inquiry report of DU that had examined the complaint of the woman. It revealed that on the day of the incident, Chakraborty found all employees missing from Gandhi Bhawan. This infuriated him and he scolded the employees including complainant ordering them not to come to office for a month.

More scholarships for research students

D Suresh Kumar | TNN

Chennai: In an effort to attract more engineering graduates to the field of scientific and technical research, the Union human resource development ministry has increased the scholarships for junior research fellows (JRFs) and senior research fellows (SRFs) in centrally-funded technical institutions.

Accordingly, BE/BTech graduates with a GATE score (IIT graduates with a CGPA of 8 or above need not appear for GATE) or equivalent qualification will receive a stipend of Rs 16,000 per month in their first two years of research in technical institutions under the control of the ministry. Earlier they were entitled for a monthly scholarship of Rs 14,000.

Likewise, the research fellows who have a postgraduate degree in basic sciences along with a pass in the National El-

igibility Test (NET) will receive a monthly fellowship of Rs 18,000 up to the fifth year of research. Till now, they were given Rs 14,000 a month in the third and fourth year of research and Rs 15,000 monthly in the final year.

The monthly emolument for researchers with a ME/MTech degree has been in-

creased from Rs 14,000 to Rs 18,000 in the first two years and from Rs 15,000 to Rs 20,000 in the next two years.

In a letter on September 30, Pratima Dikshit, director (technical), HRD ministry, has communicated the revision in scholarship, which will come into retrospective effect from April 2010, to the heads of Indian Institutes of Technology, National Institutes of Technology, Indian Institute of Science, National Institute of Technical Teachers Training and Research and other central institutions.

TO STAY THE COURSE

Nobel in medicine for IVF pioneer

Brit Scientist's Achievements Made It Possible To Treat Infertility In Couples

Tirna Ray | TNN

Stockholm: This year's Nobel Prize for medicine has been awarded to British scientist Robert G Edwards for the development of in vitro fertilization therapy. The announcement was made by Goran K Hansson, secretary of the Nobel Assembly at the Karolinska Institutet in Stockholm on Monday.

In vitro fertilization is a technology that allows a woman's egg to be fertilized outside of her body and then returned to her womb for maturation and birth of the child. Approximately four million children have so far been born using IVF.

Edwards's achievements, said panel members of the Nobel Committee, have made

it possible to treat infertility, a medical condition that plagues more than 10% of couples across the world.

The Nobel Prize awarded in the area of reproduction comes during a time of intense controversy over human embryo stem cell research, which allows for the use of undifferentiated embryonic cells in the development of treatments and organ transplantation. IVF is intimately tied to embryonic stem cells research, as the technique is used to derive



ULTIMATE HONOUR: Professor Robert Edwards

the cells from the embryo.

While stressing on the developments, Hugo Lagercrantz, member of the Nobel Committee, said that IVF babies are as healthy as other children.

Goran K Hansson on the other hand said that while choosing the Nobel laureate, in keeping with the tradition of the Nobel Prize, the panel concentrated on the developments that has led to the research and discovery.

Currently professor emeritus at the University of Cambridge, Edwards, born in 1925, studied biology at the University of Wales in Bangor and at Edinburgh University in Scotland, where he received his PhD in 1955 with a thesis on

embryonal development in mice. He became a staff scientist at the National Institute for Medical Research in London in 1958 and initiated his research on the human fertilization process. From 1963, Edwards worked in Cambridge, first at its university and later at Bourn Hall Clinic, the world's first IVF Centre, which he founded together with Patrick Steptoe.

Harriet Wallberg-Henriksson, president of the Karolinska Institutet, also part of the Nobel Assembly, in a separate press conference said minutes before the announcement that the Nobel this year was extremely well-deserved and like every year, focused on the discovery that fundamentally changes the way people look at things.

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Indian lost test tube baby race to Edwards by 67 days

Pushpa Narayan | TNN

Chennai: As news of a British researcher winning the Nobel prize for pioneering in vitro fertilization spread through the Indian scientific community on Monday, there was introspection about a lost opportunity which may have brought recognition for the work of Indian researchers.

On October 3, 1978, barely two months after the birth of the world's first IVF baby Marie Louise Brown, India had also produced its own — Durga alias Kanupriya Agarwal. Brown's scientific father, Robert G Edwards, professor emeritus at University of Cambridge and hailed as the father of IVF, has now been honoured with the Nobel prize in medicine. But the West Bengal-based Dr Subhash Mukhopadhyay went on to face an inquiry by the West



World's first IVF baby Marie Brown

Mukhopadhyay devised the same technique as Edwards without knowledge of the parallel research in UK. But he didn't have any collaborators nor did he document his work

Bengal government in December 1978, before committing suicide on June 19, 1981, after the state refused to recognize his achievement. Senior scientists and gynaecologists across the country mourned his death on Monday and many urged the centre to correct a historical error by honouring him.

Mukhopadhyay devised the same technique as Edwards without knowledge of the parallel research in UK. The difference was that Edwards was 67 days ahead of him. Besides, the Indian did not have any collaborators nor did he document

his work. "While Dr Edwards had documented every step right from animal studies, Dr Subhash had nothing. And in science, no claims can be proved without documents," said Dr Jayashree Gajaraj, former president, Federation of Obstetrics and Gynaecology Society of India (FoGSI).

"It hurts to see that the efforts of an Indian have gone unrecognised," said former Centre for Cellular and Molecular Biology chief Dr P M Bhargava, who was part of the committee that formulated the IVF lab guidelines.

Medical miracle, but ethical issues prevail

Paris: Over more than three decades, the "test-tube baby" has been transformed from a man-made wonder into an almost medical routine, but one that still comes hedged with ethical questions.

Millions of infertile couples have experienced the joy of parenthood thanks to in vitro fertilisation (IVF), whose pioneer, Bob Edwards, won the 2010 Nobel Medicine Prize on Monday.

Edwards' technique has remained in essence un-

changed since the first IVF child, Louise Brown, was born in 1978.

It entails taking an egg from the woman, whose ovulation is stimulated by hormones, and fertilising it in the lab-dish with sperm from her husband or a donor.

The egg divides, is allowed to develop into an early-stage embryo in a nurturing fluid and is then inserted in the uterus. Doctors usually implant two or more embryos to boost the chances of a live birth.

"IVF is now a routinely established procedure," Martin Johnson, professor of reproductive sciences at the University of Cambridge, said.

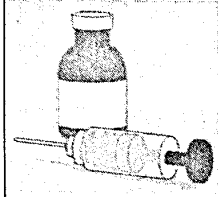
Nearly four million children

In vitro fertilization

In vitro fertilization is a medical procedure for fertilizing human eggs outside a woman's body. "In vitro" is Latin for "in glass," a reference to the Petri dish used in this method of treating infertility. Steps in the procedure are timed to correspond with a woman's menstrual cycle:

1-8 days

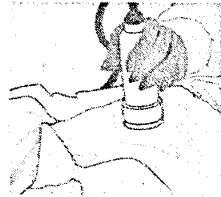
Egg production is stimulated by fertility drugs



Source: American Medical Association Encyclopedia of Medicine
Graphic: Chicago Tribune

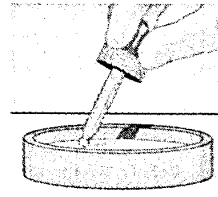
9-13 days

Ripening of the eggs in the ovaries is monitored with ultrasound scans



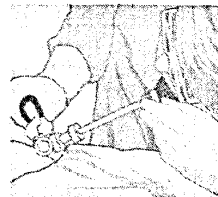
14-15 days

Just before ovulation, ripe eggs are removed by needle from the ovaries; eggs are mixed with the man's sperm in a dish



16-17 days

After incubation, the fertilized eggs that have become embryos (at the two- or four-cell stage) are placed in the uterus



© 2010 MCT

around the world have been born through IVF or a related technique, involving the transfer of a single sperm into the egg. Researchers have added a series of enhancements that have "fantastically improved" the chances of success, said Joelle Belaisch-Allart, head of the assisted reproduction unit at the Sevres Hospital, Paris.

They include improvements in stimulating eggs; screening egg and sperm for DNA health; better ways of handling the egg; and improvements in the fluid in which the embryo is cultured.

Like the contraceptive pill, IVF has had far-reaching social conse-

quences. It has enabled career women the chance of extending their fertility way far beyond their 40th birthday and given single women the chance to be a mum, even if the child does not have a dad.

There have also been scandals that have sparked demands for tougher screening of IVF candidates and closer regulation of IVF clinics.

A controversy erupted over Carmen Bousada, a Spanish woman who was single and had twin boys at the age of 67 using IVF — and died from cancer last year, leaving infants just two and a half years old.

Last year, doctors were aghast at the case of "octomum," a 33-year-

from clear.

In the largest study to date, French researchers in June reviewed all assisted births in 33 registered clinics in France from 2003 to 2007, more than 15,000 children in all. They found a major congenital malformation in 4.24 percent, compared to two or three percent for the general population. The main problems were heart disease and the urogenital system, which was much more common in boys.

"A malformation rate of this magnitude is a public health issue," said lead researcher Geraldine Viot, a clinical geneticist at thePort Royal maternity hospital in Paris. AFP

old Californian woman, Nadya Suleyman, who had octuplets in defiance of warnings that multiple pregnancies are closely linked to children born with abnormalities and developmental problems.

Suleyman, it turned out, was a single mother who already had had six other children aged seven and younger. On the clinical side, some studies have found a link between rare diseases and IVF, although other experts say the picture is far

50% rise in heart diseases among Guj schoolkids

Bharat Yagnik | TNN

Ahmedabad: Heart diseases among children below 18 years has gone up nearly 50% compared to the previous year. This was found in a school health check-up survey. Over 6,300 school students across Gujarat were diagnosed with major heart diseases in 2009-2010 during the check-up. In 2008-09, 4,247 students were found suffering from heart diseases.

According to health authorities, more students of primary and secondary sections are being detected with heart diseases in government, semi-government and private schools in Gujarat. The check-up programme covers over one crore students below 18 years of age.

While majority of the students detected with heart diseases suffer from congenital problems, doctors warn that junk food and insufficient exercise of students are leading to high blood pressure, diabetes and heart attack in early adulthood.

"Nearly 60-70% of the students who are referred under the school health check-up programme have 15 different kinds of heart defects from birth. Of these, nearly 35-40% have defect in heart valves. Hole in walls of the heart is another most common disorder," said Dr R K Patel, director of the U N Mehta Institute of Cardiology, chief referral centre for children requiring surgery.

Dr Patel said increase in cardiac cases during health check-ups would be largely due to high detection rate and growing awareness about these diseases even in rural areas.

Diabetes enters the classroom as well, finds study

Jayashree Nandi | TNN

Bangalore: All of 10 years and diagnosed with diabetes? In a worrying trend, Bangalore doctors are seeing more and more youngsters with Type 2 diabetes.

It's a strange paradox: while longevity is increasing thanks to technology, diseases of old age are visiting the young rather early. What once affected people in their 50s is now diagnosed in the 10-20 age group. A study by the Karnataka Institute of Diabetology (KID) among 4,500 of its Type 2 diabetes patients found that 138 were in the age group of 10-30 years. Shockingly, 11 of them were 10-year-olds!

Founder-director Dr K R Narasimha Shetty told TOI: "Type 2 diabetes in such young patients was unthinkable. When such cases come to us, we take a lot of time to assess whether it is Type 1 or Type 2. The trend is alarming and the reasons are the kind of diet, obesity, lack of exercise and other lifestyle issues. I put them on medication and also suggest rigorous lifestyle modification."

Other doctors, too, are seeing a rise in the number of young patients. At Manipal Hospital, endocrinologist Dr Mohan Badgandi sees at least one or two in the 20-30 age group every day. "We see 30-40 such cases every month. This age group is usually more motivated and ready to follow the doctor's advice. I don't suggest insulin pumps for this group unless some of them have very high sugar levels and consistent problems. I put them directly on the lifestyle modification programme," he said.

YOUNG AT RISK

Corporal punishment: UP worst state for schoolkids?

Pervez Iqbal Siddiqui | TNN

Lucknow: Three years after Uttar Pradesh banned corporal punishments on the Supreme Court's directive, the state has the dubious distinction of being on the top of the list of the cases of physical punishments in schools.

According to a recent Women and Child Development Ministry study, covering five schools each in the state's 41 districts, between five to 11 cases of corporal punishment were reported. Activists say, with an average of about 600 schools in every district, one can imagine the magnitude of the menace in the state.

Officials acknowledge the gravity of the situation, but



insist that they are taking remedial measures. "We've directed the schools, both gov-

ernment and private, to check such incidents. We're keeping a watch on them," said UP basic education department director D C Kanaujia. "We've directed educational institutions to put up complaint drop boxes on the campuses for students and parents to drop their complaints."

School authorities have been directed to address complaints within 30 days and officials from basic education department have been authorised to open the complaint boxes and take necessary action.

However, a TOI team visited 10 top Lucknow schools and found not a single complaint box. Several parents said they hadn't come across any such boxes.

HC notice to govt, CBSE

Jaipur: The Rajasthan high court on Monday took a serious note of alleged thrashing of a 7-year-old Jhunjhuna school student in July and issued showcause notices to the state government and the CBSE, asking them to explain their failure in checking corporal punishments.

Pia Choudhary, a class I student at Jhunjhuna's Tagore School, lost her left eye's vision after her teacher allegedly subjected her to corporal punishment for failing to complete her mathematics homework. TNN

Times of India ND 05/10/2010 p-12

Now, IIM-A students to help tackle Naxalism

Dayananda Meitei | TNN

Ahmedabad: Naxalism, which has wreaked havoc in various parts of the country, may soon get a management perspective. A team of five students of the post graduate programme for executives (PGPX) at the Indian Institute of Management, Ahmedabad (IIM-A) took the initiative to find out the root cause for the disturbance. Now, they will come up with a way to tackle it.

The students — Tanushree Datta, Jyoti Agrawal, Gautam Bhuyan, Vinayak Bhat and Gautam Cormoli— recently visited the Naxal-affected villages in Chhattisgarh. They spoke to villagers in Raipur, Jagdalpur, Dantewada and Bijapur to understand the issues people face and from where the Naxals source their funds.



FOR A JUST CAUSE

What they learnt during their stay was more disturbing than what has been projected.

The team found that there was hardly any social development in these villages; civic amenities and infrastructure were also limited. And thanks to Naxalism, extortion and illegal fund generation were increasingly becoming the order of the day.

The Naxals force children in these villages to join their

movement. They beat them and even go to the extent of killing them if they disagree. The police on the other hand tortures them, alleging that they are sympathizing with the underground movement, the team found.

Based on their first-hand experience, the students plan to come up with a solution that will help check problems created by Naxals.

“What we saw and understood was very different from what is commonly believed about Naxals that the cause of their agitation is lack of facilities and development,” Bhat said. The villagers’ understanding of hygiene and amenities is very different. “They lead a self-sufficient and peaceful life, disrupted by disturbances created by the Naxals and the police,” he added.

New test to help IVF hit bullseye

Method To Pick Best Embryo For Implant, Cut Multiple Pregnancies

Washington: Researchers using a microscope and time-lapse photography believe they have developed a method for predicting which test-tube embryos are the most likely to develop properly, and are licensing development of a commercial test.

Their findings, published in the journal *Nature Biotechnology*, also provide some new insights into the development of days-old embryos, such as how babies inherit some genes from the mother and some from the father.

They said the new test could help fertility clinics pick the best embryo to implant in the womb. This would save mothers from having several treatments and help



improve on the current method of implanting multiple embryos to try to get one pregnancy and risk multiple births in the process.

"Our results shed light on human embryo development," wrote

BRINGING JOY
<ul style="list-style-type: none"> ● IVF entails taking an egg from a woman and fertilising it in the lab dish with sperm donated from a man. The egg divides, is allowed to develop into an early-stage embryo in a nurturing fluid and is then inserted in the uterus ● More than 3.75 million IVF babies have been born since the first baby, Louise Brown, was born 32 years ago ● Most IVF treatments take place in women aged between 30 and 39 ● Multiple pregnancies are one of the biggest problems in IVF ● One in six couples worldwide experience some form of infertility problem at least once during their reproductive lifespan

Renee Reijo Pera of Stanford University. "Our methods and algorithms may provide an approach for early diagnosis of embryo potential in assisted reproduction."

When test-tube babies are con-

ceived by uniting egg and sperm in a lab dish and transferring the embryo into the uterus to develop, most do not develop properly. Labs have been looking for ways to improve their success rate. REUTERS

Wait over: Tech that makes PCs boot up in seconds

© Artiga Photo/Corbis

London: Tired of using your home computer that takes a long to boot up? Don't worry, it's time to say hello to a new technology which scientists claim will reduce the start-up times drastically.

With the 25-year-old BIOS (Basic Input/Output System) technology making way for new start-up software known as UEFI, the next generation of computers are set to boot up in just a few seconds, experts said.

The traditional BIOS technology, which has been used to boot up computers since 1979, was never designed to last as long as it has, and is one of the reasons modern computers take so long to get up and running. By contrast, UEFI — which stands for Unified Extensible Firmware Interface — has been built to meet modern computing needs, and will soon be the pre-eminent technology in many new computers, enabling them to go from “off” to “on” in seconds, the Telegraph reported.

BIOS technology has barely changed since the early days of mass computing, and the system struggles to cope with modern computing evolutions, such as USB-connected keyboards or flash drives.

UEFI is a more adaptable system, that can cope with keyboards and peripherals being connected to different ports, and which could also be used to support the next-generation of touch-screens and natural gesture interfaces. PTI



WARMING SIGNAL

Laptops can cause 'toasted skin syndrome'

Chicago: Have you ever worked on your laptop computer with it sitting on your lap, heating up your legs? If so, you might want to rethink that habit.

Doing it can lead to “toasted skin syndrome,” an unusual-looking mottled skin condition caused by long-term heat exposure, say medical reports.

The condition also can be caused by overuse of heating pads and other heat sources that usually aren't hot enough to cause burns. It's generally harmless but can cause permanent skin darkening. In very rare cases, it can cause damage leading to skin cancers, said Swiss researchers. AP

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p-17

Unravelled: How the brain stores memories

Australian and US scientists believe they have isolated a new mechanism by which the brain learns and stores memories, a finding they say could help treat brain injury and disease. Bryce Vissel, lead researcher at Sydney's Garvan Institute, said the discovery challenges the way the brain has long been believed to capture and encode information. "In terms of understanding learning and memory mechanisms in the brain, it's quite a fundamental shift in our understandings," he said. "It can influence not only our understanding of brain function, but also drug development and our psychological approaches to treating people with Alzheimer's." The project studied the impact on the brain function of mice when a receptor – previously deemed critical to learning something for the first time – was chemically switched off.

Now, 3D TV viewing goes glasses-free

Tokyo: Here is a solution for television viewers who like 3-D but hate the glasses.

Tokyo-based Toshiba Corp on Monday unveiled the world's first high definition liquid crystal display 3D television that does not require special glasses — one of the biggest consumer complaints about the technology.

Toshiba describes the TVs as being for "personal use." Whether consumers embrace the new TVs remains to be seen. Many might be put off by the fact they'll have to be very close to the screen for the 3-D effect to really work not to mention the steep price tag.

Electronics and entertainment companies around the world are banking on 3D to fuel a new boom in TV, movies and games. Most 3D TVs on the market today rely on glasses to rapidly deliver separate images to each eye, which creates a sense of three-dimensional depth.

The new TV uses a "perpendicular lenticular sheet," which consists of an array of small lenses that directs light from the display to nine points in front of the TV. If a viewer is sitting within the optimal viewing



NEW DIMENSION: The first 3D TV that does not require special glasses on display at Ceatec, Asia's largest electronics trade show, in Tokyo

zone, the brain integrates these points into a single 3D image. "The result is precise rendering of high quality 3D images whatever the viewing angle within the viewing zone," Toshiba said in its release.

The system is similar to what's used in Nintendo's 3DS, the company's highly anticipated handheld device that features glasses-free 3D gaming.

Toshiba will offer two sizes — 12 inches and 20 inches — designed for personal use. The technology isn't advanced enough yet to integrate into larger screens. Suggested viewing distance for the 20-inch model is 35.4 inches and 25.6 inches for the 12-inch size.

Current 3D-capable televisions require viewers to wear glasses that act as filters to separate images to each eye to create the illusion of depth. Rival Sharp earlier this year unveiled a small glasses-free LCD touchscreen that shows 3D images for use in mobile phones, digital cameras and games consoles such as Nintendo's 3DS, to be released in Japan in February 2011. AGENCIES

Times of India Ahmedabad 30.09.2010 P-1

Vibrant Gujarat takes solar flight

Bharuch Co Powered World's First Manned Solar Plane

Prashant Rupera | TNN

Vadodara: When the world's first manned solar powered airplane took off from a Switzerland airfield recently, Gujarat had a role to play in its maiden flight. Some special polymers used in this airplane were manufactured at the Panoli plant of Solvay Specialities India Pvt Ltd in Bharuch. The company is the Indian arm of Belgium-based Solvay group, whose consolidated sales clocked 8.5 billion euros last year.

A prototype of the plane will be showcased at the Vibrant Gujarat summit scheduled in January 2011 at Gandhinagar.

India is set to contribute more towards Solar Impulse, a project to prove the business viability and profitability of renewable energy. As a

TAKING WING

► Swiss adventurer Bertrand Piccard is the mastermind of Solar Impulse project to prove the business viability and profitability of renewable energy

► On April 7, 2010, the first manned solar-powered airplane flew for almost one hour in Switzerland

► On July 7, the solar plane took off on a 26-hour flight on solar power

► With a wingspan that matches the Airbus A340 airliner, the plane is covered with an array of 12,000 solar cells and powered by four small electric motors.

► It is expected to conduct its first international flight next year, before undertaking a world tour in 2013 or 2014



Prototype of the solar-powered plane

technology partner of the project, Solvay plans to carry out further research on specialised polymers at its R&D centre in Savli near Vadodara.

"One of the most sophisticated speciality polymers produced at our Panoli facility, (polyether ether ketone, or PEEK) was used for this project," said Roger Kearns, region general manager Asia Pacific and member of the executive committee of Solvay group.

The high temperature metal replacement polymer is light yet tough

and was used in throttle housing of the airplane, he said.

The solar plane, which is currently on display at World Expo at China, will leave Shanghai on November 1. "The goal is that this solar plane should take a world tour," said Kearns.

The group plans to invest around Rs 650 crore in Gujarat, including Rs 120 crore for research and development in Savli and Rs 500 crore towards upgrading its existing units at Panoli plant.

Publication: The Times Of India Delhi; Date: Oct 5, 2010; Section: Editorial; Page: 16;



In tune with tech-enabled education, a London school outsources maths classes to India

The smarter the better

Tech-enabled education is a global trend. Not only are teaching methodologies being reworked, technology is helping plug demand-supply mismatches. A north London school, for instance, has outsourced maths classes to India, courtesy a felt dearth of teachers in the subject at home. Thanks to online classes arranged by a UK firm, British students can turn to tutors in India on condition interactive sessions are booked in advance. Another example is cross-border English teaching whereby instructors in, say, Asia are getting to teach students in America.

Via internet, access to quality education anywhere in the world becomes a possibility, scoring a goal for choice. Knowledge acquisition gets truly globalised, broadening the horizons of both students and instructors. Those forwarding protectionist or nationalist arguments against technology's revolutionising potential fail to see that. Equally, proponents of pedagogical orthodoxy don't realise that fun is the key to successful teaching. Happily, in India, educational institutions are increasingly seeing virtue in smart class-

rooms. Multi-media content for syllabuses creates scope for innovation. With interactive whiteboards – content stored in them can be viewed online – and facilities like video-conferencing and live broadcasting, smart classrooms can boost pupils' interest in studies like never before.

Some say tech-dependence makes students inattentive and impairs basic skills such as speak-

ing and writing. Surely making technology an asset rather than a liability depends on a teacher's skills, inventiveness and sense of balance. Conventional teaching by and large encourages bookishness and can dull students' sense of engagement. With access to classroom audio, video, graphics and 3D animation, children can embrace learning as a pleasure, not a chore. As time goes on, tech-savvy will increasingly be demanded of youth. So, let's catch them young.

Student-teacher rapport is key

A north London school's decision to outsource online maths classes to India is baffling. The teachers' union in Britain is justifiably concerned about the consequences of the decision. Ideally, shortage of qualified teachers in a particular institution should be addressed by recruiting more teachers, including from abroad. But, in this case, the policy of

only if a teacher-student rapport exists and makes education stimulating. In a classroom, a teacher gets to know the aptitude of students and their levels of understanding and engagement. Technology can only support this face-to-face between the student and the instructor. Online teaching sessions cannot match or even compensate for such live interaction, since the teacher can't communicate with or get to know his students personally or attend to their individual needs to the same extent.

COUNTERVIEW

Ajay Vaishnav

the school concerned points to a flawed assumption that technology-enabled distance learning can be a substitute for classroom teaching.

Traditional modes of education can never become obsolete simply because technology can never replace a teacher. A classroom serves as an immediate social environment, which is central to any quality educational experience. The value of other instructional materials grows

Also, increasing use of technology in school hampers development of skills in a child. Handwriting and vocabulary suffer most. Gone are the days when students used to score extra marks for beautiful handwriting or elocution. Yet another problem arising from excessive use of technology is the sedentary lifestyle it encourages and its accompanying health risks. Lastly, with increasing incidence of cyber crime, there's a need to be vigilant about children using the internet. If such supervision is possible in school, that may not always be the case at home.



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Mobilising The Other India

Land has emerged the great Indian fault line of the early 21st century

Sudipto Mundle

India has done well from globalisation. No historic transformation can occur with only gains and no losses, on which more below. But on net reckoning, India, like many other developing countries, has gained. Despite the dire predictions of radical theories of imperialism, the old Ricardian theory of comparative advantage has asserted itself, albeit in a dynamic form. Today, it is the developed world that is haunted by the spectre of free trade, not the developing world.

However, the benefits of globalisation have accrued only to one part of India: the India of IT parks and financial markets, businessmen and traders, corporate leaders and executives and, yes, also the white-collar workers in new corporate hubs like Gurgaon, Whitefields or Rajerhat, and their blue-collar counterparts in the smart new factories. Let us call this globalised India.

Then there is the other India: Bharat as we once used to call it. The India of small farmers, of tribals clinging to their disappearing forests in Orissa, of landless Dalits living in the shadow of upper caste atrocities, of shivering Bihari workers building roads in the frozen deserts of Ladakh. It is another world, till recently untouched by globalisation.

Now, global competition and insatiable hunger for profits are driving globalised India into a headlong collision with this other India over the right to land and

other natural resources. Clashes over land, the forests that grow on it and the mineral resources that lie beneath it have become almost daily fare. From Nandigram and Singur to the forests of Orissa and the Chotanagpur Plateau, from Karnataka's illegal mines to the farmers protesting against an expressway in Noida, land has emerged the great Indian fault line of the early 21st century.

Ominously, the frequency and intensity of these clashes are growing across the country. Often, though fortunately not always, the 'law and order' machinery of the state has backed globalised India in its onslaught on the other India. In a recent notice to the UP government relating to land acquisition in

“If you wish to acquire someone's land, make an offer attractive enough to induce her to sell. In countries with competitive land markets, this is how it works”

Noida, the Supreme Court described such partisan government intervention as state-sponsored terrorism. The Naxalites thrive on such partisan state violence and the sullen anger it generates in the other India. It creates the support base for their violent confrontation with the state.

Now, with great foresight, Rahul Gandhi and his mother, the leader of the Congress, are



Singur: Globalisation, its gains and its discontents

positioning themselves to represent this same constituency in the democratic process. You don't need rocket science to see the underlying arithmetic. This other India is by far the largest constituency in this country. But there is more at stake here than the rise of an individual political leader. Mobilisation of the other India within the democratic space is probably the single greatest political challenge of our times. If politicians of the democratic process fail, then the Maoists gain. Thus, the fault line between globalised India and the other India also marks the dividing line between the politics of violence and the path of non-violence.

Is there a possible path of peaceful dispute resolution on the question of land? The answer is yes. The principle is really quite

simple. Turn the potential losers from land acquisition into a support base of winners. If you wish to acquire someone's land, don't coerce her or try to rip her off. Instead make her an offer attractive enough to induce her to sell. In countries with well-developed and competitive land markets, this is how it works. This is also the principle adopted by multilateral agencies when they support public projects requiring land acquisition: the displaced persons must be compensated enough to be better off after displacement than before. The coercive approach leads to conflict between winners and losers, and sometimes every one becomes a loser as in Singur. In the inducement approach, everyone becomes a winner; there are no losers.

We have examples before us

of how the two approaches work. Singur is a classic example of a coercive approach that failed. But in Sanad, where the Nano project moved from Singur, you have an example of the inducement approach. Handsome compensation for farmers led to a win-win outcome for all. Other successful examples include the Mohali international airport in Punjab, the Cochin international airport in Kerala and the pro-farmer land acquisition policy of the Haryana government.

Given our inequities, our law needs to be tilted in favour of the weak, with mandatory and harsh punitive provisions against attempts at regulatory capture by the strong. It is promising that lawmakers are beginning to get their act together on the land question. The group of ministers reviewing the draft Mines and Minerals (Development and Regulation) Bill, 2010 reportedly reached a consensus that 26 per cent of annual profits must be set aside for displaced families. This is quite radical in the Indian context.

There will be strong resistance to such initiatives from globalised India. But if politicians hold firm, they will successfully mobilise the vote banks of the other India in the democratic process. Globalised India too will eventually come to terms with this new reality of not taking the other India for granted. Democracy in India will then have taken a great leap forward.

The writer is an emeritus professor at the National Institute of Public Finance & Policy, New Delhi.

33% hike in stipend for science, engg students

Charu Sudan Kasturi

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NEW DELHI: Pursuing postgraduate studies and research in the sciences and engineering is set to become more lucrative.

Research scholars at the Indian Institutes of Technology and all other central science and engineering schools will soon receive a massive hike of up to 33 per cent in the monthly stipend they receive. The human resource development (HRD) ministry has communicated the decision to all central institutions including the IITs.

The move is a key component of the aspirations voiced by PM Manmohan Singh and HRD minister Kapil Sibal to once again attract bright young brains to research, top government sources have told *HT*. "You could call it an early bonanza ahead of the coming festive season," a source said.

Apart from the IITs, students and research scholars at the Indian Institute of Science (IISc), Bangalore, the Indian Institutes of Science Education and Research (IISERs), the National Institutes of Technology (NITs), and the Indian

FESTIVAL BONANZA



■ Massive hike for research scholars at IITs. FILE PHOTO

Institutes of Information Technology (IIITs) will also benefit.

The HRD ministry letter to the Directors of these institutions also says the "revision in rate will be applicable to other government and government aided institutions funded by the All India Council for Technical Education and University Grants Commission."

Students who graduate from the undergraduate B.Tech programme at the IITs with a Cumulative Grade Point Average of over 8, and those who clear the

■ Students who graduate from the B.Tech programme at the IITs with a CGPA of over 8, and those who clear the Graduate Aptitude Test in Engineering will receive ₹16,000 a month during PG research

■ PG degree holders in the basic sciences and students who have qualified in the National Eligibility Test will receive ₹18,000 a month till 5th year of PhD

■ Students who hold post graduate degrees in engineering will receive ₹18,000 a month during the first two years of research

Graduate Aptitude Test in Engineering will now receive ₹16,000 a month during their PG research. They receive ₹12,000 a month at present.

PG degree holders in the basic sciences and students who have qualified in the National Eligibility Test will get ₹18,000 a month till their fifth year of PhD research. Students who hold PG degrees in engineering will receive ₹18,000 a month during the first two years of research and ₹20,000 a month during the next two years.

Medicine Nobel for IVF pioneer

ACCOLADE His research helped millions of childless couples become parents

HT Correspondent

■ letters@hindustantimes.com

NEW DELHI: Dr Robert Edwards, 85, was named winner of the Nobel Prize for Medicine on Monday for his work on in-vitro fertilisation (IVF), which has helped millions of infertile couples around the world have children.

Edwards' work led to the birth of the world's first test tube baby, Louise Brown, in Britain on July 25, 1978. Since then, four million babies have been born using the IVF technique.

"His contributions represent a milestone in the development of modern medicine," the Nobel Assembly at the Karolinska Institute, Stockholm, which selects the Nobel Prize winner for Medicine, said.

If Brown was the first test



■ Edwards: Delighted

tube baby, the second was born in India 67 days later. But the event was mired in controversy. According to the Indian Council of Medical Research, the baby was born on October 3, 1978, in Kolkata, but Dr Subhash Mukhopadhyay's effort was not initially accepted as an IVF procedure, as it was not scientifically documented.

The first validated IVF baby in India was born eight years later on August 6, 1986.

CONTINUED ON PAGE 19

Medicine Nobel for IVF pioneer Edwards

CONTINUED FROM PAGE 1

Dr Indira Hinduja used the technique for the birth of Harsha Chawda at the KEM Hospital in Mumbai. Infertility affects one in 10 couples worldwide, of whom an estimated 19-20 million live in India, according to the World Health Organisation.

The IVF procedure involves extracting an egg from a woman and fertilising it in a lab-dish with a donated sperm. When the egg divides and develops into an early-stage embryo, it is inserted into the uterus to grow into a baby.

INFERTILITY AFFECTS ONE IN 10 COUPLES WORLDWIDE, OF WHOM AN ESTIMATED 19-20 MILLION LIVE IN INDIA

The treatment does not promise 100 per cent success, with just about 25 to 30 per cent of fertilised eggs leading to childbirth. Long-term follow-up studies have shown that IVF children are as healthy as other children.

India is world's third largest carbon emitter

Chetan Chauhan
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NEW DELHI: India is now world's third biggest carbon dioxide emitting nation after China and the US.

The new emission data from the United Nations is a probable cause of worry for India's climate negotiators at the next round of talks that started in Tianjin in China on Monday, where rich countries are expected to ask India and China to

take legally binding emission cuts after 2012, when present global climate treaty expires.

China in 2009 moved to the top position while contributing 23 per cent of the total global emissions and India this year surpassed Russia to take the third position with five per cent.

The saving grace is that the difference in total carbon emissions between the US (22 per cent) and India, is still huge. Russia's emissions have been fallen because of economic slow-

(We will unilaterally, voluntarily, move on a low-carbon growth path.)
JAIRAM RAMESH
 Environment Minister

down.

The data prompted Environment minister Jairam Ramesh to comment that the country cannot afford to strive for high economic growth and rise in carbon emissions.

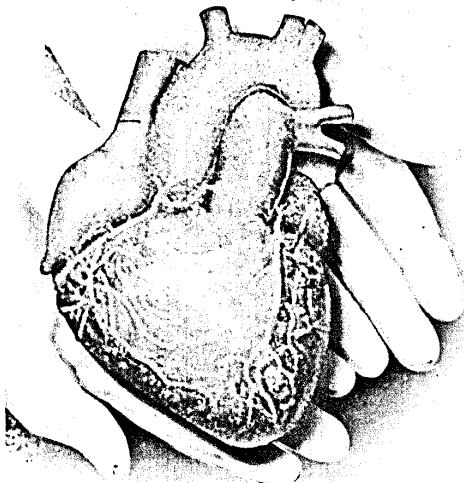
"We will unilaterally, voluntarily, move on a low-carbon growth path. We can't have 8-9 percent GDP growth and high-carbon growth," news agencies quoted Ramesh saying at the sidelines of an environment meet in Kathmandu.

India's per-capita carbon emission is still lowest in the world (about 4.5 tonnes) but the demand for energy is rising, especially among the middle-class.

Ramesh, first to comment on India's position, said India's rush

for wealth could not come at the expense of the environment. "Its to be low-carbon 8 percent, 9 percent growth and that is the objective that we have set for ourselves," he said.

But, the pressure on India and China to reduce emissions is rising. Last month US chief climate negotiator Todd Stern told a meeting of major economies form that a legally binding climate treaty was not possible until India and China take "obligation" to reduce emissions.



Take heart

INSIDE STORY Painstaking work by researchers has created artificial organs such as the heart, kidney and lung. Apart from bringing hope to millions, this has the potential to end black marketing in human organs.

bodylanguage



"Artificial organs are the future. A decade from now, people will look back and ask 'did you actually take out kidneys and livers from healthy people?' It's so barbaric," said Dr Harsh Jauhari, chairperson of the department of renal surgery, Ganga Ram Hospital.

The successful implantation of an artificial heart that would allow a 15-year-old Italian boy to live a normal life for 20-25 years has given hope to organ donor-strapped countries such as India where almost 200,000 die each year waiting for a donor. Apart from corneal transplantations, only 4,600 organs are transplanted in India each year.

The Italian job is not the only reason for hope. University of California San Francisco (UCSF) researchers led by researcher of Indian-origin Shuvo Roy announced the successful development of an artificial kidney that uses nanotechnology to get thousands of microscopic filters and a bioreactor to mimic the metabolic and water-balancing roles of a real kidney.

Over the next five to seven years, Roy's goal is to apply silicon fabrication technology along with engineered-compartments for live kidney cells to shrink that large-scale technology into a small device that can then be implanted in the body.

"The wonderful thing about artificial organs is that the patients can live a normal life without the need for immune suppressant medications, which cost between Rs 6,000 and Rs 8,000, and need to be taken for the rest of your life to prevent the body from rejecting a implanted foreign tissue," said liver specialist Dr Anupam Sibal, who is also

medical director, Apollo Hospital.

Though a lot of work has gone into developing an artificial liver, success has been elusive. "Unlike the heart, which has a mechanical pumping function, or the kidney with its filtering function, the liver is a complicated organ that works as a detox and biochemical factory, which is a challenge to amalgamate with synthetic function," said Sibal. Even though living donors can donate a part of their liver, only 500 of the estimated 20,000 people requiring a liver transplantation need it.

So acute is the shortage that the Union Ministry of Health is considering proposing presumed consent organ donation - presumed consent puts everyone automatically on the donor register unless she or he declares otherwise - to push up organ retrieval. The idea, however, was dropped because of its potential for misuse in a country such as India, many who do not want to donate would not even know they need to register themselves as a non-

THOUGH A LOT OF WORK HAS GONE INTO DEVELOPING AN ARTIFICIAL LIVER, SUCCESS HAS BEEN ELUSIVE...DONORS CAN DONATE A PART OF THEIR LIVER.

donor.

In India, "explicit consent" is needed. Under "explicit consent", the donor or the family needs to clearly say they want the deceased person's organs to be harvested. Some European countries such as Spain, Belgium and Italy have an informed consent law, which allows hospitals to harvest organs from dead or brain-dead people who have not registered themselves as non-donors. "Spain has the highest organ donation rates in the world, with 40 people donating per million population, as against India's 0.05 per cent (per million)," said Dr A.K. Sethi, head of gastroenterology and liver diseases at B.L. Kapoor Hospital in central Delhi.

Shortage of voluntary donations has created the black market for organs such as kidneys and livers - which can be retrieved from live donors - to boom. In the case of the kidney alone, from the 150,000 people who suffer end-stage kidney failure each year and need a transplant, barely 3,500 find a donor.

"In the absence of human donors, the only option is pig organs or artificial organs. It's a no-contest," said Jauhari.

THE SCIENCE AND ART OF ARTIFICIALITY

TRANSPLANTING HOPE: INDIA STATS

In India 200,000 people need a transplant each year, meaning one every three minutes. Apart from corneal transplantation for blindness, only 4,600 transplants are done each year.

Brain-dead donations are 0.05 for one million people, compared to 40 for one million in Spain and 30 for one million in the US and the UK.

PRESUMED DONOR, UNLESS PROVED OTHERWISE

Some countries have laws that consider every one a donor unless the person has requested that he or she does not want to donate.

PRESUMED CONSENT: Italy, Spain, Belgium, Norway, France, Finland Austria, Switzerland, Sweden

INFORMED CONSENT: India, US, Canada, Ireland, Denmark, Germany, UK, Australia, Netherlands

ARTIFICIAL ORGANS A REAL SOLUTION

ARTIFICIAL HEART: Though Robert Tools, 59, became the first person to get a plastic-and-titanium artificial heart run by wireless battery pack strapped to the waist back in 2001, it was only in 2008 that artificial hearts without external wires penetrating the skin. A 15-year-old Italian boy became the first one to get a permanent one this week.

Lack of brain-dead donors makes complete heart transplants extremely rare, only 50 in 15 years. Human valves retrieved from cadavers are routinely transplanted.

ARTIFICIAL CORNEAS: A bioartificial cornea made by implanting a sliver of collagen into the eye can help 10 million people suffering from corneal blindness in the world, about 2 million of whom live in India. 15,000 corneal transplants (classified as tissue donation) are done in India annually.

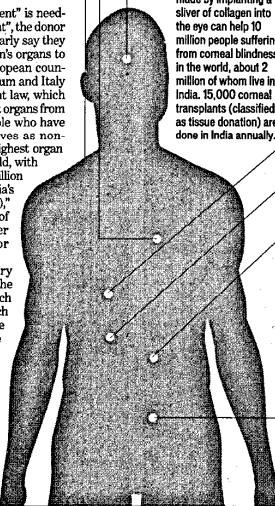
ARTIFICIAL LUNG: In a first step in the development of new lungs from a patient's own cells, US researchers announced in June that they had created a primitive artificial lung that rats used to breathe for several hours. The findings were reported in the journal Nature Medicine. There are no estimates of lung transplantation in India.

ARTIFICIAL LIVER: Though artificial liver cells have been regenerated from stem cells, an entire liver is yet to be created for transplantation. Livers can be harvested from a living donor as the donor's organ can take over the function of the section donated. India needs 20,000 liver transplants a year, but only 400-500 transplantations are done.

ARTIFICIAL KIDNEY: In a development that could eliminate the need for dialysis, University of California San Francisco researchers led by researcher of Indian-origin Shuvo Roy last month unveiled a prototype model of the first implantable artificial kidney. It can be implanted in the body without the need for immune suppressant medications, allowing the patient to live a more normal life. India needs 150,000 kidney transplants, but only 3,500 are done annually.

ARTIFICIAL PANCREAS: A non-implantable system comprising a glucose monitor, two pumps and a laptop dubbed as an "artificial pancreas" can deliver both insulin and the regulatory hormone glucagon to help diabetics achieve near-normal blood sugar levels. An estimated 50.7 million people in India have diabetes, of which 1 per cent - 5 million - have insulin-dependent type-one diabetes.

Pancreas transplantation is needed only for diabetics with severe complication such as kidney failure, diabetic retinopathy (blindness) and neuropathy (nerve problems such as no sensation in the feet). There are no estimates on how many need it.



University of Illinois offers grain storage technology

Charu Sudan Kasturi

■ charu.kasturi@hindustantimes.com

NEW DELHI: Struggling to prevent its grains from rotting, India could learn key technology lessons from the University of Illinois, Urbana Champaign, one of the world's leading universities in agricultural research.

The university is set to sign on Tuesday a memorandum of understanding with the Indian Council for Agricultural Research for research collaboration, university officials said on Monday. The university Chancellor Dr Robert Easter is also scheduled to meet Agriculture Minister Sharad Pawar.

"We've developed technologies that have helped preventing moulding of grain in silos. That is something we could share with India," Easter said.

Professor K.C. Ting, who heads the university's department of agriculture and biological engineering, said the technology can be used in India. "We'll however need to do research in India to reduce the cost of using the technology," Ting said.

While specific projects are not included in the "generic" MoU, the university's research in food grains storage technology solutions is likely to prove a major area for India to gain from the partnership.

Hindustan Times, ND 05-Oct-10 p-19

Stuxnet hits India the most

CYBER WMD Experts blame failure of INSAT 4B satellite this summer on this cyber superweapon

Anirudh Bhattacharyya
■ letter@hindustantimes.com

NEW YORK: It's being described as the new cyber WMD and may have crippled an Iranian nuclear plant, but one cyber-security company has estimated that the worm, Stuxnet, may have its largest footprint in India.

Another expert has put forward a conjecture that the failure of the INSAT 4B satellite this summer may have been due to this cyber superweapon.

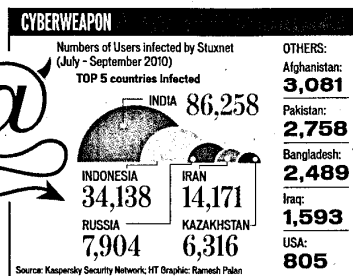
According to data posted by Alexander Gostev, Chief Security Expert at Kaspersky Lab, India has topped the list of the most infected countries.

While clarifying that the data had been collected from Kaspersky's personal product line, the numbers are still wor-

risome. Since Stuxnet was first detected in July, the number of infections in India in the first five days was at over 8,500 with just over 5000 in Indonesia and a little over 3000 in Iran, the top three countries.

The latest data set, between September 20 and 25, makes it clear that the problem is still raging in India, which again heads the list with over 8,000 infections, trailed by Indonesia with about 3000 and Kazakhstan with approximately 1300. The numbers of Iran dipped to 765.

Gostev noted in the analysis: "Iran managed to significantly cut its infection rate by cleaning many infected systems. If



this trend is maintained, then Iran will stop being one of the centres of the epidemic. India, on the other hand, has stayed

more or less at the same level; it is encouraging, though, the epidemic doesn't seem to be on the rise."

Iran has been projected as the epicenter of the Stuxnet epidemic. Iran's nuclear infrastructure near Bushehr had been beset by problems caused by the worm which the Iranian regime has claimed was part of cyberwarfare being conducted possibly by Israel and the United States.

Meanwhile, the threat posed by Stuxnet to India has been alluded to by Jeffrey Carr, author of Inside Cyber Warfare, who has drawn a link between the failure of INSAT 4B and Stuxnet.

In Forbes' The Firewall blog, Carr that the satellite was operated by the Indian Space Research Organisation or ISRO which "is a Siemens customer. According to the resumes of two former engineers who

worked at the ISRO's Liquid Propulsion Systems Centre, the Siemens software in use is Siemens S7-400 PLC and SIMATIC WinCC, both of which will activate the Stuxnet worm."

Siemens control systems, like those used in Iran, have been reported as the most vulnerable to this particular worm.

While data may vary according to the company undertaking the assessment, other reports have also made it clear that India is within the top three in terms of infections, along with Iran and Indonesia.

A report in September from Symantec pointed out that while 58 per cent of infections were in Iran, about 18 per cent was in Indonesia and nearly 10 per cent in India.

Chaos at DU EC meet

Pental sets up another panel on Cobalt issue

STAFF REPORTER ■ NEW DELHI

The Executive Council meeting of the Delhi University on Monday resembled a pandemonium with Vice-Chancellor Professor Deepak Pental ordering marshals to remove protesting teachers who demanded to table the controversial inquiry report on Cobalt-60 radiation case. Forcing a closure of the matter, the V-C has again appointed a three-member committee to investigate further into this matter. According to sources in the university, marshals pushed the protesting teachers out of the meeting hall when the meeting was about to start. "The V-C has now started using physical force against the teachers. He is

behaving like a dictator and the use of marshals to remove the elected teacher representatives from the meeting is absolutely uncalled for," said sources. They added that in the meeting, the V-C said that a three-member committee will be constituted soon to enquire into this case.

Sources added that some of the elected teacher representatives were protesting against the alleged illegal stay of V-C in his office even after his tenure was over. "Some teachers protested against the stay of the V-C at his office without any direction from the Visitor of DU, i.e. President of India. They told V-C that he was not eligible to chair the EC meeting as his tenure was over. The marshals dragged some of the EC members and refused them entry into the meeting," said sources. They added that while the meeting was witnessing huge uproar, Prof. Pental said that a three-member commit-

tee will be constituted and adjourned the meeting.

Confirming this, Prof Pental said that a new committee will be formed soon. "The meeting was called to discuss the important report on radioactive exposure but some sections of the elected teacher representatives created chaos during the meeting. We have decided that a three-member sub-committee will be constituted within two-three days and this committee will read the report of the enquiry committee and fix responsibility," said the V-C. On the issue of using marshals to remove the protesting teachers, he said that some teachers were at the door of the meeting hall and tried to block his way.

"When I was entering the meeting hall, some teachers tried to block my way. The security persons might have considered this action as a threat and thus pushed them a little. They are members of the EC

and they should behave in a proper manner," said Prof. Pental. It is worth mentioning that the EC meeting held on last Friday had also witnessed huge uproar with the teachers protesting against the alleged illegal stay of the V-C in his office.

On the other hand, a press release issued by the Registrar of DU later on Monday evening said the EC has authorised V-C to constitute a three-member sub-committee to examine the inquiry report in the Cobalt-60 radiation matter. "The University has decided not to give any administrative posts to teachers of department of Chemistry who had been named in the report. The university will also submit the report of the enquiry committee to Atomic Energy Regulatory Board (AERB) and Delhi Police and will request the AERB to lift the ban imposed on using radioactive substances in DU," the release said.

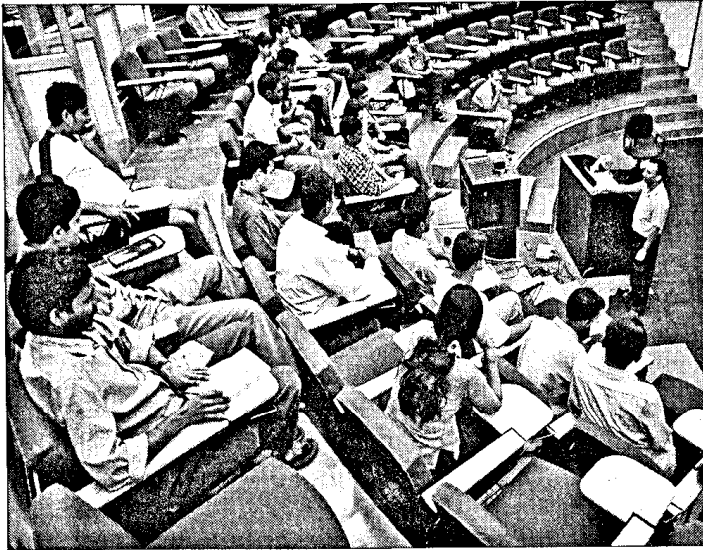
Mediocrity hurts higher education

3 *IDIOTS* is an iconic movie. It beautifully epitomises the 'competition' hole into which most of India's children, youth, and parents have fallen in and then keep struggling for the rest of their lives. The movie encapsulates the mindset of a poor yet rising nation, where the '99 percentile rat race' is probably the only real way to escape the tyranny of a bigger hole in their life — the cycle of poverty and lack of respect in society. An interesting but uncommented depiction in the movie is the character of the director of the engineering college who has been holding the chair for more than two decades. It is not clear whether this short-tempered and ill-mannered person is the owner or an employee, but his presence is (portrayed wonderfully by Boman Irani) toxic on everyone in the institute.

We do not have much idea as to how was he selected and who evaluates his performance. Similar is the situation in our higher education institutions. No one knows for sure the criteria on which the government selects the directors for IIMs and IITs, and later, how their performance is evaluated, if at all. This question assumes importance in the light of news from ministry of human resource development that the retirement age of directors of IITs (and by default, of IIMs) would be increased to 70 years, and that incumbents may be given extension to second terms.

That no Indian higher education entity comes within the top 150 universities of the world (QS World University Rankings 2010 edition) comes as no surprise. Or for that matter, the news that new IITs are facing acute faculty shortage, either due to location disadvantage or poor infrastructure. The seeds of mediocrity in our

Arun Kumar Jain



LACK OF INSIGHT: No one knows for sure the criteria on which the government selects the directors for IIMs and IITs, and later, how their performance is evaluated, if at all

centres of excellence are sown right from the time of the selection of directors. A comparison in the selection process at our higher education institutions and world-class universities clarifies the point.

For the directorships of four new IIMs (Raipur, Ranchi, Rottak, and Trichy), 18 candidates were finally short-listed after an advertisement. The interaction between the candidates and selection-cum-search committee (SUSC) began around 10 am, and were over by 2 pm. This means the committee spent just about 10 minutes with each candidate, assuming three-four minutes gap between two interactions. Assuming further an average three minutes for one question and response cycle, no more than four questions can be ex-

changed. That gives one question per member in a four-member panel! More strangely, in the case of the four new IIMs, the SUSC did not have any management scholar or 'academician of repute' as a member. Based on this shortest possible and one-sided interaction, the panel recommends names, which are then vetted by the HRD minister, PMO, and finally approved by the cabinet committee for appointments. In this particular case, even the chairpersons of the respective boards of governors did not have any say in the selection process — other than merely issuing the appointment letter as per instructions from the ministry. Not to mention, this entire process, may take anywhere between one and two years

(also requiring vigilance clearance, among other things.).

Compare this to the selection process of deans in world's top-ranked universities and B-schools. We have had three recent cases of India-born Americans being appointed as deans of top-notch B-schools — Nitin Nohria at Harvard, Sunil Kumar at Chicago, and Dipak Jain at INSEAD.

The first criterion for short-listing is the academic stature and work philosophy as demonstrated in scholarly research in high-impact journals and leadership attributes as a teacher, including new academic-industry initiatives, advisory roles, and interdisciplinary contributions. This means the candidates are already well-known and enjoy highest credibility in the global community

for their academic rigour and communication skills.

After this, the real test of quality of thinking, leadership mindset, vision, understanding about trends in management education, and administrative skills begins. This can only be done through several close-interactions with all major stakeholders, including non-teaching staff, faculty, governing board members, industry donors and students. There might be even a voting at the end in case of two or more equally strong and competent candidates. For instance, Jain was chosen after an intense search process led by a seven-member team representing INSEAD's faculty and board. Many other faculty and board members helped the search committee through interviews, interactions, and counsel. Professors Nohria and Kumar too went through roughly the same process.

The two selection methods provide very different results. One promotes heterogeneity and diversity by bringing diverse backgrounds together, building the foundation that lets entrepreneurial spirits soar. The other strives for homogeneity and standardisation, thereby ensuring conformity and bureaucracy. It is easy to understand which of the two approaches encourages a spirit of accomplishments through academic rigour, open-minded research and innovation. As the movie *3 Idiots* also shows, the path to learning excellence should lead to impact-making contributions, rather than learning through rote and become mediocre 'mental clerks'.

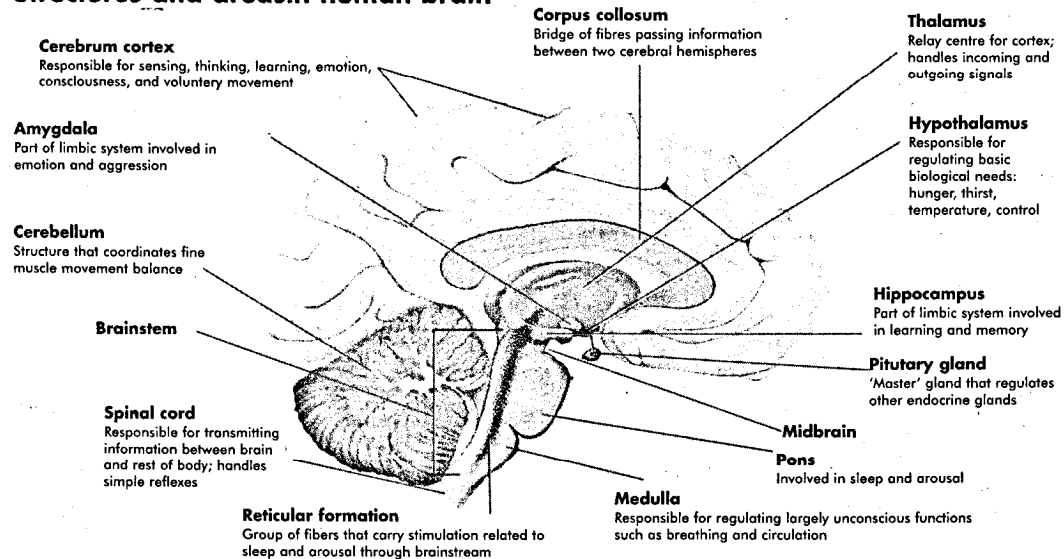
(The writer is chairman of Center for Accelerated Learning, Innovation and Competitiveness, Germany, and professor of strategy and corporate governance, IIM-Lucknow)

Turning Point

Wiring diagram of the brain

This will shed light on disorders that are presumed to originate from faulty wiring system

Structures and areas in human brain



PURNENDU GHOSH

ONE of the major challenges of neuroscience in the 21st century, as identified by the US National Academy's Institute of Medicine's Forum on Neuroscience and Nervous System Disorders is "How does the human brain work and produce mental activity?" If we want to know how the brain works we need to know connective maps that will integrate anatomy, neuronal activity, and function. A complete understanding of how the human brain functions is possible if we have wiring diagram of the brain. Wiring diagram of the human brain would also shed light on disorders that are presumed to originate from faulty wiring system.

The wiring diagram of the brain is not easy to draw, keeping in view the human brain's intricate network of 100 billion neurons and 100 million synapses. Scientists have been able to draw the invaluable wiring diagram of *C. elegans*. It took more than a decade for the scientists to draw the diagram of this microscopic worm containing a mere 302 neurons. In spite of the difficulties envisaged,

researchers are hopeful of completing human brain's wiring diagram. The optimism is due to the technological advances in neurosciences.

The classical approach to understand the working of simple neurological systems requires identification of neurons that are involved in defined behaviours. It tries to find out the connectivity between the neurons. The individual neurons are then excited to understand their role in influencing behaviour. As we move from sponges and anemones to primates and humans the neurological complexity increases several folds at each stage. It is much more difficult to identify neurons and also perturb individual neurons in human brain. It is also difficult to record neurons with enough spatial and temporal resolution.

The major technological breakthroughs over the past few years have solved or are close to solving some of these problems. The researchers have been using "Golgi stain" method to trace the path of individual neurons. Due to the limitations in this method, researchers developed new methods such as tagging different neurons with genes that produce fluo-

rescent colours so that neurons could be made to glow in different colours. This method promises to identify and map hundreds of neurons at the same time. To overcome the problem of perturbing individual neurons, researchers developed a neuronal "light switch" that allows them to turn individual neurons or neuronal connections on or off by exposing them to light. This neuronal light switch uses a protein from green algae allows them to identify and control individual neurons. "From a clinical perspective, the ability to modulate neurons using something as simple and noninvasive as light opens up opportunities for extremely targeted therapies for diseases such as Parkinson's, depression, and more," feel the researchers. To address the challenge of spatial and temporal resolution, the development of multi-channel microelectrode recording arrays allows researchers to accurately measure the activity of multiple neurons at a single time. The miniature version of these arrays has substantially increased, the number of neurons that can be monitored directly through the skin. Researchers believe the devices can be implanted in the

brain, or else where in the nervous system, suggesting we could measure the output of neurons on an individual level over long periods of time.

Blood flow and blood oxygenation are closely linked with brain activity. They indicate which area of the brain is performing the assigned task. Functional Magnetic Resonance Imaging (fMRI) noninvasively measures blood flow and blood oxygenation in the brain. What one needs is measurements in real time as there is a delay of about a second between brain activity and associated changes in blood flow and oxygenation that can be detected by the fMRI. Researchers are working on ways to minimise this delay. It is important to recognise the fact that mapping the brain will require enormous computing capacity that is required for mapping the human genome. Experts feel that additional breakthroughs (particularly in imaging and computer learning) are needed to sufficiently understand how the human brain works.

The writer is a biotechnologist and ED, Birla Institute of Scientific Research, Jaipur

Business Line ND 05/10/2010 P3

IIT-Madras sets up US-type research park

Facilitates companies to tap faculty, student talent

N. Ramakrishnan
Chennai, Oct. 4

The tall building stands out as you branch off the busy Old Mahabalipuram Road and drive along a tree-lined street. It is a warm afternoon and as you walk up to the building you are tempted to linger outside for a while, thanks to a strong and pleasant breeze.

There are quite a few people lounging outside, either having their lunch sitting under a tree's shade or simply enjoying a few minutes break before they get back to their work stations. Work on the building is not fully complete — some finishing touches are being given on the outside, while inside there is a lot of activity going on.

RESEARCH PARK

This is the first of the three planned buildings at the research park being put up by the Indian Institute of Technology-Madras at Taramani — Chennai's hub for educational and research institutions. Ginger, the Tata Group's budget hotel brand, has opened an 85-room facility on the top floor of IIT-M Research Park.

The IITM Research Park, adjacent to the IIT, provides space for research by companies with greater and sustained interaction with the IIT and its faculty. The companies can also tap into the IIT's student pool.

COS MOVING IN

A number of software companies including Tata Consultancy Services, Cognizant Technology Solutions, Amada Soft India and ARCI have taken space. Others such as BHEL, Nissan and Caterpillar have also booked space. Nissan plans to carry out research on fuel cells, while Caterpillar will



Dr Sandhya Shekhar,
Chief Executive Officer,
IITM Research Park

focus on a number of areas including product development.

COLLABORATIVE WORK

"What we are trying to do here is collaborative work," says Dr Sandhya Shekhar, Chief Executive Officer, IITM Research Park. The idea is to bring together three distinct entities — industry with its knowledge of the market, faculty members with their domain expertise and students with their ability to be highly creative, and make research relevant to what is required on the ground.

This is how university research parks function elsewhere and IIT Madras has modelled its research park on some of the best in the US.

"There is humongous amount of energy within the campus, which lies largely untapped. By co-locating a research park adjacent to the IIT, we can tap that," says Dr Shekhar.

TAPPING TALENT

Companies no longer need to wait for a summer project or a vacation to be able to employ the students. The students can engage with the companies so that they learn a lot and at the

► "There is humongous amount of energy within the campus, which lies largely untapped. By co-locating a research park adjacent to the IIT, we can tap that," says Dr Shekhar.

same time bring creativity to the companies. "If you get fresh ideas from students, that is, like a burst of energy," she adds. The students will be able to participate in research work even when their academic programme is underway, making the course more wholesome.

This is the first of the three buildings that will come up on the campus, which when fully built will have about 1.6 million sq ft of space. It will have seven conference rooms, an auditorium and a food court.

Dr Shekhar recollects a feedback she got from someone in Purdue University, who told her, "don't worry about the research, it will happen. Worry about the food. If you have good food, research will follow."

ENTREPRENEURSHIP

IIT-M identified the need to nurture entrepreneurship as one of the objectives of the research park and has housed an incubation centre for start-ups at the park. It feels that the ecosystem — of start-ups being able to tap the experience of larger companies and at the same time being mentored by IIT faculty members — would help nurture and grow the start-ups.

Without getting into the rental rates for space at the research park, both at the incubation centre and for larger companies, Dr Shekhar emphasises that the project is not a real-estate proposition. The

rentals will be much lower than that prevailing outside, but still the intent is different, she adds.

SPACE ALLOTMENT

There will be a screening committee for requests for space in the research park, according to her, to find out the intent behind asking for space.

"We have something unique and proprietary to our business model, which is the credit system," she adds. This credit system, will measure the level of interaction between the companies and IIT. "They have to earn a certain amount of credits to continue in the research park."

"We would like good research happening here, good ideas emanating from here, strong IP (intellectual property) being generated, those would be the metrics on which we would like to measure ourselves," Dr Shekhar adds.

GINGER HOTEL

The Tata group's Ginger group of budget hotels has opened its first hotel in Chennai on the 11th floor of the research park. A lot of companies felt a need for a hotel in the vicinity — one that is functional, neat and would serve as a kind of transit accommodation.

A search on Ginger Hotels' Web site reveals a "special intro rate" of Rs 1,499 for a room for one night for an adult (Rs 1,749 with taxes) and a "standard rate" of Rs 1,999 (Rs 2,249 with taxes).

Business Line ND 05/10/2010 p20

Test-tube baby pioneer wins Nobel Medicine

Vanitha Srinivasan
Stockholm, Oct 4

British physiologist and test-tube baby pioneer Robert G. Edwards has won this year's Nobel Prize for Physiology or Medicine for the development of in vitro fertilization (IVF).

"His achievements have made it possible to treat infertility, a medical condition afflicting a large proportion of humanity including more than 10 per cent of all couples worldwide," said the Nobel Committee's citation.

"A new field of medicine has emerged, with Robert Edwards leading the process all the way from the fundamental discoveries to the current, successful IVF therapy. His contributions are a milestone in the development of modern medicine," the citation said.

The announcement was made by Prof. Goran K. Hansson, Secretary of the Nobel Assembly at Karolinska Institute in Stockholm today.

Born in 1925 in Manchester, UK, Robert Edwards studied biology at the Uni-



British physiologist Robert Edwards, who helped revolutionise the treatment of human infertility, has won the 2010 Nobel prize for medicine or physiology. — Reuters

versity of Wales in Bangor and at Edinburgh University in Scotland, where he received his doctorate in 1955 with a thesis on embryonic development in mice. Prof Robert Edwards is now Professor Emeritus at the University of Cambridge.

Stressing the developments that led to the discovery, Prof Christer Hoog, Nobel Committee, Cell Biol-

ogy, said "We have looked and evaluated the long-term vision".

IVF is a safe and effective therapy. Long-term studies have shown that IVF children are as healthy as other children. "Babies born after in vitro fertilization are as healthy as normal babies", said Prof Hugo Lagercrantz, Nobel Committee, Pediatrics.

FIRST IVF BABY, LOUISE BROWN

As early as the 1950s, Edwards had the vision that IVF could be a useful as a treatment for infertility. He worked systematically towards his goal, which was realised when the world's first "test tube baby", Louise Brown, was born in 1978. Approximately four million individuals have so far been born, thanks to IVF.

The citation pointed out that medicine has had limited opportunities to help infertile couples in the past. Today, the situation is different, with IVF being an established therapy when the sperm and egg cannot meet inside the body.

The Nobel Assembly, consisting of 50 professors at Karolinska Institutet, awards the Nobel Prize in Physiology or Medicine, which kicks off the prize season every year. The Nobel Prize for Physics will be announced on Tuesday followed by Chemistry, Literature and Peace Prize on Wednesday, Thursday and Friday respectively.

Hindu ND 05/10/2010

P-12

Illinois varsity looking for IT, farm partnerships

Gargi Parsai

NEW DELHI: The Ohio State's ban on the outsourcing of software jobs to India notwithstanding, the Chancellor and Provost (Interim) of the University of Illinois at Urbana-Champaign, Professor Robert A. Easter, arrived here on Monday, looking for bilateral partnerships with IT companies such as Infosys, Wipro and Tata Consultancy Services, as also with the Indian Council of Agricultural Research (ICAR) and the G.B. Pant University of Agriculture and Technology.

Dr. Easter termed his visit, ahead of United States President Barack Obama's in November, as a coincidence, but outlined an agenda that fits into the Obama-Singh 21st Century Initiative for building partnerships in various sectors.

His visit will pave the way for the University signing two crucial Memoranda of Understanding. One will be with the Ministry of Communications and Information Technology for setting up an Information Technology Research Academy (ITRA) in New Delhi and another with ICAR for "mutually beneficial research programme."

The nature of partnership

would be in terms of visits by faculty, exchange of students and capacity-building with each side bearing its own cost.

Dr. Easter, who is a professor of animal and nutrition sciences, said that the areas identified by the U.S. side for collaboration with the ICAR are in animal husbandry, product agriculture, food technology, agriculture engineering, IT, agribusiness, agri-finance, agri-marketing and biotechnology.

"These are the broad areas for partnership and two-way areas of learning," he said, adding that IT and technology could help small and marginal farmers in marketing, pricing, water management, irrigation and managing the logistics of the food supply chain, including storage and post-harvest preservation techniques.

The professor said his University was a public-funded one with \$500 million invested in research in agriculture, computer sciences, chemical and electronic engineering, but admitted that more and more universities have to look for private support for income, as technologies developed with federal dollars "were not moving into practice."

Hindu Chennai 02.10.10 P-4

Fusion of technology with innovation, entertainment

Exhibition at annual IIT-Madras tech fest enthral visitors

Vasudha Venugopal

CHENNAI: Dancing hammers and pulsating strings create mellow sounds; stairs produce musical vibrations similar to the notes of a piano when you jump on them; a pair of hands rattling in the air, playing hypothetical drums creates dense rhythms - sounds like a magical performance, doesn't it? Only that the strings of the harp are laser beams, and the piano stairs have inbuilt sensors, while the invisible drums work on ultrasound signals - all part of an exhibition at the annual IIT Madras tech fest, 'Shaastra-2010'

The second day of the fest saw a display of creations that reflected an engaging fusion of technology with innovation and entertainment.

The highlight of the day was 'Innovation X', where selected projects of students from different engineering colleges in the country were evaluated. From pulse monitors, underwater innovations and unconventional use of mobile phone to aid daily life chores, the exhibition presented a wide range of technical designs. "It depends a lot on the individual and less on the institution, because



ON TARGET: School children learn to handle rifles at a stall set up by the Defence Research and Development Organisation at 'Shaastra 2010' in IIT-Madras on Friday. - PHOTO: M. KARUNAKARAN

some students from lesser known colleges have come up with extremely innovative designs," said Prathap Haridoss, associate professor, IIT-M.

A noticeable trend, according to Richa Agarwal, assistant professor, IIT-M, was that most projects had a touch of concern for disability, environmental consciousness, and energy conservation.

Meanwhile, as students of

the automobile society of IIT-M busied themselves in procuring parts and putting them together to design a linear expandable car from scratch, the audience watched them work with abrasion cutters and hand-held grinders with utmost dexterity. "It is a different feeling when you get into a car you have designed," said one of the designers, K. Sampath, a mechanical engineering student.

Cars for display, engines to study, an unmanned guided vehicle operated by sensors, aircraft, prototypes of remote sensing satellites, military tanks and weapons were some of the other exhibits. A science fiction writing competition, math modelling contest, technical quiz, interface between experts from industry and students and workshops on forensics and astronomy were other attractions.

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SC advice on 'unfit' varsities vexes HRD

Court Suggests Shifting Institutes To 'Deficient' Category

Our Political Bureau

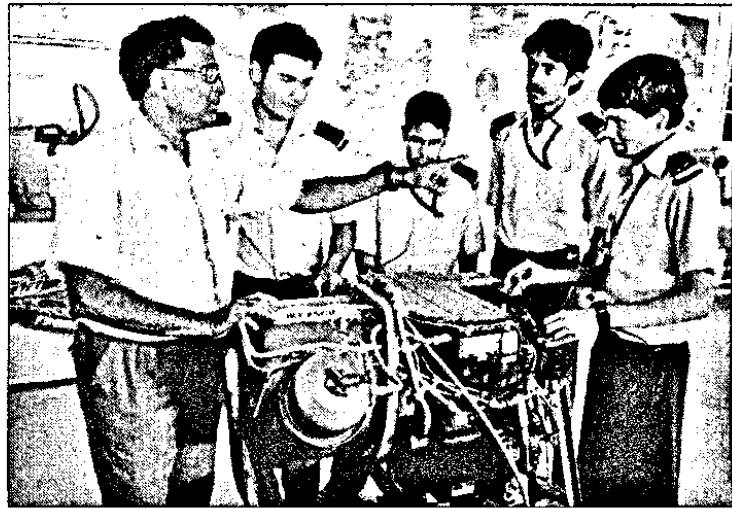
NEW DELHI

THE central government could find itself in a spot with the Supreme Court asking it to consider the possibility of shifting some of the 44 'unfit' deemed universities to the 'deficient' category. The human resource development (HRD) ministry will have to weigh immediate "interests" of students against the urgent need to "improve standards" of the deemed universities.

An expert panel headed by PN Tandon had undertaken an intensive evaluation of 126 deemed universities. The panel found that only 38 of these institutions were fit to retain the status of deemed to be universities. Another 44 were adjudged to be in the "deficient" category. It was suggested that these institutions be given three years time to improve their standards. The remaining 44 were found to be "unfit". The panel had suggested that these 44 institutions should revert to their original status of affiliate colleges. This would ensure that students in these "unfit" deemed universities get a degree from the affiliating university.

The apex court has asked the government if it would be possible to move any of the 44 unfit institutes to the deficient category. According to the court the measure would protect the interest of students in these institutions.

For the ministry of human resource development, the apex court's request could present a problem. It would mean going against the recommendations of the expert panel it had appointed and whose report it accepted. The panel consisted of PN Tandon, professor emeritus, AIIMS; Govardhan Mehta, chairman National Assessment and Accreditation Council; M Anandarishnan, chairman, IIT Kanpur, and Mrinal Miri, former vice-chancellor, North East Hill University. Going against the accepted suggestions of its high-profile panel could adversely affect the ministry's credibility vis-a-vis expert panels in the future.



CAREFUL EXERCISE: HRD ministry has to weigh immediate interests of students against urgent need to improve standards of deemed universities

On the other hand, disregarding a suggestion made by the apex court in the interests of students too could present a problem for the ministry.

Each of the 126 deemed to be universities was assessed on nine parameters, with a maximum score of 45. The 44 deemed universities which were categorised as "unfit" scored less than 19. The "deficient" institutions scored between 19 and 31. The remaining 38 deemed universities, which were seen to maintain standards, scored above 31.

Parameters considered for making this assessment included availability of the qualified faculty, infrastructure, sanctity of the admission process, research facilities and output. Given the low score of these 44 institutions, it would be difficult to find any mitigating factor to help these institutions retain their deemed to be university status.

The apex court has raised the question of students' interest. In its affidavit submitted in January, the Centre stressed that it was committed to protecting the interests of students in these institutions. To this end, it had submit-

ted that "all pre-existing colleges not found suitable for the status of deemed to be university should re-vert to status quo ante as affiliated colleges of state universities of jurisdiction," to enable them complete their courses.

The "unfit" institutes are located across 13 states / UTs and their constituent units are located within the geographical and academic domain of 28 state universities. The Centre had assured the apex court that if an institution is unable to obtain affiliation, every effort would be made to facilitate migration or re-enrolment of students to equivalent or similar courses in other institutions. Students enrolled in distance education courses affected by the derecognition should be enrolled by the IGNOU or state open universities and further admissions into these de-recognised universities should be stopped.

The division bench of Justices Dalveer Bhandari and Deepak Verma asked the unfit 44 to furnish details about their student strength and courses before the next hearing on December 7.

Copycat incentives

An inter-academy, independent scientific report on GM crops was commissioned by the Indian Academy of Sciences, Indian National Academy of Engineering, Indian National Science Academy, National Academy of Agricultural Sciences, National Academy of Medical Sciences and National Academy of Sciences. The merits or demerits of the report have been sidelined. Having copied sections of the text from an article, without referencing and attributing, the report has lost credibility.

Some defenders of the report have sought an analogy with newspaper columns, where there are no footnotes, referencing or bibliography. This is facile. A research report is not an op-ed piece written for newspapers. This is not the first time something like this has happened. In 2006, we had a Mashelkar Report on patent law issues. Notice, this was a report on intellectual property and, regardless of its other conclusions, was discredited because large sections had been plagiarised from a paper written by someone else.

The IPCC's (Intergovernmental Panel on Climate Change) Himalayan blunder occurred because a paragraph was copied, without attribution, from *Down to Earth*. Since public memory is short, we no longer remember that the industry chapter of the Economic Survey for 1995-96 copied the text verbatim from the corresponding chapter for 1994-95, changing only the numbers, and in one instance, forgetting to do even that.

Proudhon coined the slogan "Property is theft." For physical property, few people will agree. However, historically, attitudes towards intellectual property have been different in India. The Vedas stand for knowledge and anyone who sells and commercialises the Vedas is condemned. The country must wake into a heaven of freedom "where knowledge is free." It is a separate matter that those who have written tracts against intellectual property have ensured copyright remains in their names.

There are different forms of intellectual property, with a traditional difference between industrial property (patents, trademarks, industrial designs, geographical indications) and literary and artistic works



Our education system trains to faithfully reproduce, not think originally

BIBEK DEBROY

(copyright and related rights). As a general global trend, while industrial property protection has become stronger, that of copyright has become weaker. Technology is partly responsible. But it is also true that post-Uruguay Round, IPR protection is stronger in India — de jure and de facto — since enforcement has improved. We may still get a report from the Business Software Alliance stating that software piracy in India is high by global standards. However, as a trend, piracy rates have dropped.

There is greater IPR awareness, even among the judiciary and the police. There are several law firms specialising in IPR. There wouldn't have been a SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institutions)

Most educational institutes in developed countries have a policy on plagiarism. I am not aware of a single Indian institute that does. But there is an emphasis on getting students to work on independent research reports. For the most part, these are copied from elsewhere and because of faculty laziness, go undetected. When detected, they go unpunished.

with an emphasis on grassroots inventions earlier.

There is also a price angle. If software and video piracy has dropped, that's largely because prices are lower. But there is a physical versus non-physical issue that goes beyond the dichotomy between industrial property and copyrights. Music is usually, though not invariably, protected by copyright. Few of us are likely to walk away with a music DVD from a retail music store without paying. But resistance to illegal free downloads is less. With two colleagues, I recently edited a health report for India. This was a priced publication, published commercially by a publisher, but wasn't priced particularly high. A respected fellow academic asked me for a free soft copy. That I refused is

irrelevant. The point is that this academic wouldn't have gone to a bookstore and walked out with the report without paying. However, there is a cavalier attitude towards soft and non-physical copies and we have a special problem with academia and the education system.

Publishers have a pre-publication system of vetting manuscripts. One such manuscript turned up recently and it had large sections on IPR. Technology has made copying and pasting easier. But it has also made the detection of crime easier. A Net search revealed that this manuscript had been copied verbatim from an existing report on IPR.

Most educational institutes in developed countries have a policy on plagiarism. I am not aware of a single Indian institute that does.

One can't expect such a policy if faculty members themselves are guilty of plagiarism, in lifting lecture notes and even setting examination papers. But simultaneously, there is an emphasis on getting students to work on independent research reports and one is not talking about MPhil/ PhD theses. For the most part, these are copied from elsewhere and because of faculty laziness, go undetected. When detected, they go unpunished. The US has a statutory body called the Office of Research Integrity for scientific misconduct. We don't have one and there is no independent ethics body. There is an informal Society for Scientific Values, but all its investigations have been restricted to the physical sciences. Social

sciences are outside its purview.

Incentives are increasingly linked to research output and there are pressures to publish. Without publishing, one is damned. But those pressures are as much applicable to social sciences as to the physical sciences.

Discussions about developing an IPR culture in India often get bogged down in law and modernisation of patent and copyright offices. These are undoubtedly important, but we need to fix the education system. That's rarely addressed. Consider the useful reports of the National Knowledge Commission (NKC). While there are reports on innovation and these also talk about IPR, those sections are about innovation constraints for manufacturing enterprises, infrastructure and human resources in IPR offices and collaborations between industry and academia. There is nothing about the culture of academia. Without that, we won't substantially increase the number of PhDs or patent applications. Western (meaning English) education was introduced because the British East India Company needed clerks and translators.

Clerks and translators didn't need to think. Their job was to faithfully reproduce, the more faithful, the better. The educational system hasn't transcended this and evaluation and examinations still focus on faithful reproduction, not independent thinking. Add to this the perception that non-commercial violations are acceptable and needn't be culpable. This moral issue is more difficult to address than a limited legal one.

Tom Lehrer was several things — song-writer, satirist, mathematician — and produced a gem. "Plagiarise, Let no one else's work evade your eyes, Remember why the good Lord made your eyes, So don't shade your eyes, But plagiarise, plagiarise, plagiarise.... Only be sure always to call it, please, 'research'." Etymologically, "research" may have meant something else, but we have converted it to "re-search". There are several software programmes to detect plagiarism and some are non-proprietary. How many Indian educational institutes use them or even know about them?

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Accept half the idea

Navratna university solution isn't enough

A Committee of vice-chancellors has recommended criteria for selecting higher educational institutions that have the potential to become navratna universities. The criteria, enumerated in a report submitted to the HRD ministry, include research output, patents, publications, sponsored projects, research grants, rankings by National Accreditation and Assessment Council, funds, admission procedures, quality of faculty, financial support to students and intake of foreign students. That India's education, including higher education, has to improve is beyond dispute. As in every other sector, the answer lies in competition and choice, driving efficiency. This is spliced with better regulation, such as through the Independent Regulatory Authority for Higher Education proposed by the National Knowledge Commission (NKC). NKC's recommendations on higher education highlighted the need for an increase in the number of universities to 1,500 and academic autonomy for selected institutes. The current report also mentions autonomy, interpreted as freedom in pay-scales, tuition fees, setting up campuses abroad and flexibility in generating resources. This is also linked to the current regulatory content, which is based on physical infrastructure (input) rather than outcome.

Having accepted the argument for autonomy, problems lie elsewhere. Vice-chancellors don't want autonomy alone. They also want more resources and additional financial support. While NKC's recommendations on competition and better regulation in higher education have gone for a six, the government has been forthcoming in setting up more institutes (including 29 new universities) at public cost. All resources have opportunity costs. It is fair to argue that India's successes in higher education (IITs/IIMs) were due to public initiatives. But, as in several other sectors, market failures of 1950s and 1960s do not mean there are market failures today. Resources spent on navratna universities should instead be spent on social sectors like school education and primary healthcare. Simultaneously, better regulation and disclosure will ensure private sector accountability improves. For instance, why should there be this hang-up about profit-making and raising resources through the equity route? There is yet another problem with fiscal incentives. These are invariably static and fail to anticipate dynamic market changes. There is a parallel with the commerce ministry's abortive identification of thrust products and thrust markets. In 1991, would anyone have identified software as a sunrise sector?

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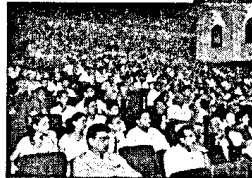
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Edudigm's paradigm

payal shah reports on a recent workshop that aimed at creating a model to combine the best in technology and mentoring to connect students, parents, teachers, educationists and schools

EDUCATION in India dates back to the time when children were taught in *gurukuls*, the aim of which institution was to bring out the best of in every pupil to help him lead a moral life. But the present system of higher education far from serves this purpose; it is primarily business and quality has been replaced by quantity. Thanks to government institutions running on the basis of the quota system and rampant politicisation, ill-will discontent and unemployment are on the rise. These drawbacks underscore the need for reforms to make the system serve a greater number of learners more fully.

Over the years, competition in higher education has become really stiff. More and more aspirants are opting



The workshop stressed on common problems about pedagogy, careers and mentoring.

for technical education to enhance their employment potential.

But amidst all this, today's students lack the vision to think beyond certain socially accepted paradigms and are wholly unconcerned of the means in the mad rush to achieve fixed ends.

In view of such conflicting currents within the higher education system, Edudigm — an initiative of the Indian Institute of Technology, Kharagpur alumni, Rajiv Agarwal, Nishant Shah, Lokesh Verma and Manish Shankar along with present students of IIT, Kharagpur Nitish Jaipuria and Faizan Khan — recently organised Ekalavya — a panel discussion-cum-interactive session. The event witnessed the participation of about 600 students and teachers from around 70 schools from West Bengal and Jharkhand and focused on technology, careers, mentoring, institutes, examinations and the best practices in education. Among the panelists were Professor UK Chatterjee of IIT, Kharagpur and Prashant Sharma, executive officer at the office of alumni affairs and international relations, IIT, Kharagpur.

Speaking on the occasion, Professor Chatterjee said, "Education sets you free from prejudices and widens your horizon and its aim is to gather wisdom. Great thinkers like Socrates and Newton have always attached supreme value to the moral core of education. To children, a teacher is a godlike figure leading them from darkness to light."

The different speakers emphasised the problems plaguing the system today. Students, they said, were the victims of a theory-based approach and rote learning had replaced genuine understanding of a subject. Also, teachers lacked the proper infrastructure to make learning an enjoyable experience. Most of the institutions, they said, were part of the rat race and largely favoured elite commercialisation, why was why there is a dearth of role models and experts who inspire and guide.

The main objectives of the workshop were to address the common problems related to pedagogy, careers and mentoring faced by pupils, parents and teachers and the measures needed to rectify them. Inspiring professionals from diverse backgrounds aimed at instilling a positive mindset in students by motivating them. The workshop also aimed at creating a model to combine the best in technology and mentoring to connect students, parents, teachers, educationists and schools and spread awareness of Edudigm's ideology, innovations and technology that are meant to bring about a transformation in the Indian scenario by making education more accessible, affordable and enjoyable.

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Army Chief gets registration for PhD research

BHOPAL: The Barkatullah University (BU) here has issued registration for PhD in Military Science to Chief of Army Staff (COAS) General VK Singh after he cleared his Research Degree Committee (RDC) viva in May this year.

The Army Chief is undertaking doctoral research on 'Security implications of rise of fundamentalism in Afghanistan: Its Regional and Global Impact with Special Focus on Wakhan.'

The COAS had appeared for his registration viva before the Bhopal varsity RDC on May 28 as a prelude to obtain the PhD and had cleared the interview. However, following various formalities including minor changes in the title and synopsis of the research topic as suggested by the RDC, the University issued registration to him only recently.

"General Singh has got the registration and has started his research work. Since the topic does not require much field work, he would be carrying out the thesis work at his headquarters in New Delhi," said his Research Guide. —PTI