The coral, pangaro in Marathi and Hindi, is one of the many trees that sports red or reddish flowers around now, ushering in our fierce summers. The many varieties of coral span the whole spectrum from orange to scarlet to crimson, from which flows the generic half of its botanical name, *Erythrina indica*. The flowers, flame-shaped and borne in thick clusters at the tips of branches, are put out between February and April, when the tree is bare of leaves. A magnet for birds, early mornings the tree turns into a veritable aviary as orioles, mynas, ioras, sunbirds, all descend to feast on its nectar; even carrion-eaters like the crow are drawn to it irresistibly. Corals have a distinctive bark, a soft grey ground streaked with lincoln green, and thorny branches. Being prickly and easy to propagate (cuttings grow readily), rows of young trees are widely used to form living, beautiful fences. *Erythrina’s* trifoliate leaves, like those of the palash, are deified, being held to represent, by Hindus, the Trimurti of Shiva, Brahma and Vishnu, and by Christians, the Holy Trinity. Different varieties show striking variations: the leaves of some are painted with thick white veins, while there is a rare outlier that bears white, not red, flowers. Our campus used to have the lone specimen of the latter, which after gracing the Middle Gate road for many years was turned into dust by termites.

Presented in this issue is a series of well-researched essays and opinion pieces that deconstruct notions of education, schools and the classroom. In the process, they also suggest alternative modes and methods to improve access to learning, and also provide a more holistic learning for children. They are thematically organised under four broad segments:

1. Beyond the Classroom
2. Reconfiguring the Classroom
3. From the Classroom
4. Beyond our Boundaries

(Contd. overleaf)
From the Vedas onwards, ours has been an educational culture firmly dug into the bedrock of ‘received’ knowledge, where we seldom question why a certain body of information happens to be equated with knowledge.

An enduring paradox of the Indian educational scenario has been its continuing Westernisation, far greater after independence than it was under British rule. Also, despite a number of education commissions and policies, a very large percentage of India continues to remain illiterate and out of school. The extended world of IIT Bombay too has its own share of people who have chosen to delve into the complex and variegated world of school education, choosing to walk on paths less travelled. Looking inwards to more indigenous solutions, these are innovators who instill new beliefs they create fear and dependency

A mong the many oxymorons the modern society unwittingly throws up, like “disaster relief”, “legal justice” or “scientific truth” my all-time favourite still remains, “school education”.

Now, for most people, the words school and education are synonymous — the former merely being the implementation of the latter. And they will grudgingly confess that there are faults with implementation, but they will add that those faults are continually being corrected (the myth of the scientific method is all-pervasive).

But it’s becoming almost clichéd to trash schools — and who are we to be any different? So here’s a surprise quiz that shouldn’t take you more than five minutes, once you’ve assimilated the premise, that is (if it still does, consider yourself a veritable poster-boy for the system):

Compare the essential character of schools and prisons similarly:
- they control the victim’s time and environment
- they control the inmate’s movements, thoughts and associations

Despite a number of education commissions and policies, a very large percentage of India continues to remain illiterate and out of school.

Our foray into alternative education does not mean decrying conventional education completely. A part of the IIT landscape for many years now has been Kendriya Vidyalaya and Campus School. This is also the time for them to look at parents, to be under the spotlight. They are the focus of this issue’s History segment. In addition, this month’s personality is Ms Manjuli Sharma from Kendriya Vidyalaya. Finally, in Beyond our Boundaries, we have moved beyond our borders in an article from Claire Chaise (the French language teacher at IITB) who speaks about the alternative education movement in France.

In the final analysis, all children, irrespective of their place and economic or social milieu should have an equal access to education. What matters more is not who teaches, but the ‘what’ and the ‘how’ of teaching. The unifying thread that perhaps ties all these different and occasionally disparate articles together is the desire for an education system that will teach our children not just the ability to answer, but also the power to question.

- A school that teaches them communication; not just to compete and impress others, but to be able to speak, write and convey what they truly think and feel.
- Where lessons learnt do not just equip them for a career, but enable them to be in tune with themselves, as well as with nature and the integrated nature of life.
- A system that teaches our children not just what to learn, but also ‘how to learn’, and that too from unusual and unique sources. One-time learning might not be enough for them to fend for themselves in this continually changing world.

NOTES

1. The educational system of modern India has its beginnings in the 19th century. Lord Macaulay is said to have laid the foundation of the modern Indian education system through his well-known Minutes on Education in February 1835.

Beyond the classroom

Reneging on Parenting, Reneging on the Earth

We are faced with the paradoxical fact that education has become one of the chief obstacles to intelligence and freedom of thought. — Bertrand Russell

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Some differences:
- to qualify for prison, you need to at least break the law; for school, just turning four is enough
- the prison term is fixed; the school term is fixed for all inmates, with no time out for good behaviour
- prisons function 24 hours a day, schools release their inmates daily
- prisoners are legally entitled to an education, some are not entitled
- schools are a very finely graded hierarchy

So this miraculous human mind of ours planned to educate its young and ended up creating a prison. Unintentional, you say — not too bright, what?

On the contrary, something which even Lord Russell seems to have missed is that it’s not paradoxical at all, it is purely intentional. The agenda of modern education is to create a
This miraculous human mind of ours planned to educate its young, and ended up creating a prison.

population of disciplined, politically impotent beings, who, like the creatures in Huxley’s Brave New World unquestioningly accept their lot as blind producers and consumers within the dominant ideology of their time. Tragically, it just happens to be an anti-life, anti-planet, techno-capitalist ideology as well.

Reneging on Parenting

Childhood is not preparation for adulthood — it is a part of life. — Alexander Neill
Let’s be honest — most adults today have less and less time to deal with children. So increasingly, the three idiots of modern life — computers, mobile phones and television are taking over the role of parenting.

Never are the inadequacies of schooling brought into sharper focus than when schooled adults turn into parents. Shorn of all creativity, intuition, and self-confidence, the victim of yesterday turns the perpetrator of today. (Isn’t ragging a cognizable offence?) Parenting in the modern age has been reduced to a secondary function — the school sets the agenda. So, ironically, schools seem to be the only option for child-rearing. Humanity’s ingenuity for self-destruction has created yet another self-fulfilling juggernaut. Reneging on all responsibility, the victim of yesterday turns the perpetrator of today. (Isn’t ragging a cognizable offence?)

Children reared in these enlightened communities are indeed fortunate — being allowed to grow free, exposed to the variety of life-styles and technologies and directly experiencing primary activities. Just consider offhand, the satisfaction of the direct experience of:

1. Exploring and celebrating nature (“free range children” as opposed to “battery children”) by playing in the mud, frolicking in streams, roaming in fields, climbing trees, gathering fruit.

2. The Food Cycle — early exposure to organic farming, developing a respect for life and an appreciation of survival methods and sustainability.

3. The Water Cycle — experiencing the monsoons and its intimate connection with the food cycle. Participating in rainwater harvesting, building canals and tanks, recharging wells, pumping water from bore wells, etc. Understanding the effects of various irrigation technologies by direct experience.

4. Learning compassion through tending of buffaloes and cows (my friend’s six-year old son, Shankara always regrets not having brought his buffalo when he visits the LT lawns) and other farm animals.

Unfortunately, the consequences of these actions are too horrific to even consider. For if we are to continue along this trajectory of (you can call the path of a decapitated chicken a trajectory), the lethal brew of technology and market economics will make all such considerations superfluous, since it shall soon devour the earth and everything on it, all the while chanting paens to progress. So it is imperative that we do not make our future generation in our own image. We must instead expose them to our faults, while at the same time creating a space for them to evolve alternatives. Essential to these articulations of “meaningful living”. But whatever may have been their philosophical differences, they all have one thing in common, and that is the complete repudiation of the modern school system. If nothing else, at least that should tell us something.

5. The Sun, Earth and Moon systems observed daily leads to a direct understanding of the mechanics of celestial bodies. The connection between the appearances of constellations, the changing seasons and the food and water cycles are also directly made.

6. Appreciating diversity in nature — identifying plants, insects, reptiles and birds, observing life-cycles of farm animals, pond life, etc.

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7. Working with their hands develops a respect for labour. Naturally develop their ability to use a variety of farm and carpentry tools. Learn the science behind hand pumps, wood chulas, motors, generators, solar power, etc. Learn survival skills like lighting a fire.

8. Understanding that ‘waste’ is essentially a technological creation. On the land, nothing is wasted — recycling is by default.

9. Appreciating inter-dependence (“All things are connected.” — Chief Seattle). Develop an appreciation of the dynamic balance of nature — the fallacy of natural selection as the underlying-reality, and the obvious evidence of natural cooperation as the essential driving force.

10. Interacting with rural communities. Witnessing complex caste and class realities, unlike the bland mono-class culture that city schools uphold.

11. Festivals that are linked to seasons and food cycles, giving meaning and relevance to the traditions and cultural activities.

One can only hope that from these attempts, our future generations can rejuvenate the spirit of life, or to restate Chief Seattle’s ardent plea, that humankind can return to a state of “the end of surviving and the beginning of living.”

Over the last century, there have been many successful articulations of “meaningful living”. But whatever may have been their philosophical differences, they all have one thing in common, and that is the complete repudiation of the modern school system. If nothing else, at least that should tell us something.

Hemu and Mahu

in

At the Hand Pump

Down–up, down–up, down–up, we pump away
The water gushes – hip hip hurray!
Take only what we need
No wastage, no greed

And let the overflow
Help the vegetables grow

What’s this? The drain’s aclog
Something’s in the pipe – oh, a frog!
Help her out Hemu – careful with that stick
A gentle tap should do the trick

Gentle! There, out she pops
And gone – in three quick hops

Children reared in these enlightened communities are indeed fortunate — being allowed to grow free, exposed to a variety of life-styles and technologies, and directly experiencing primary activities.

Gentle tap should do the trick

At the Hand Pump

Gentle!

There, out she pops
And gone – in three quick hops

Raintree December 2009-January-February 2010

3
Thekambattu – It’s Men and Boys

V SUNDER Alumnus, B Tech 1986 and his wife SONATI

We (Sunder and Sonati) live with our two sons Badri (twelve years old) and Varun (eight years old): on our land outside Thekambattu, which is a small village near Salem in Tamil Nadu. The boys do not go to school and neither do we formally ‘teach’ them in any way.

So then, what do we do all day?
The two of us are busy with the housework, the work on the land, the visitors, and so on. But this article is about the boys. They are, of course, involved with some of our work: they help in making roshogullas and in cleaning up the house before visitors arrive, for instance. But much of the day is theirs to do as they please.

It was remarkable to see how well the children had used the available spaces, trees and rocks, and incorporated them into their plays.

I need to insert a disclaimer here: What I write is not to be taken as a formula. Nothing is static, and neither is our situation. The very fact of looking at a situation through the window of an article for Raintree somewhat distorts it. Moreover, what the boys do goes on for months and even years: many things are connected with each other. What I write on the causes and their effects may well be hotly contested by the boys.

Anyway, here goes: we have had many visitors over the years, many things are connected with each other. What I write on the causes and their effects may well be hotly contested by the boys.

One upshot of this method was that their daily play with the children had used the available spaces, trees and rocks, and incorporated them into their plays. The degree of improvisation was superb: no performance of a play was quite the same as the previous one. They learnt technique out of need, rather than by being taught.

What was even more heartening was the degree of cooperation that developed between the actors; after all, a play succeeds or fails depending on the strength of the relationships between the whole bunch of actors.

For us adults, this reinforced something that we already knew: children can resolve conflicts through a consensual approach rather than through ‘Might is Right’. It is for us to provide an environment where this can happen simultaneously. In the same space and time, ‘shops’ were opened: their evolution has been dramatic and multifaceted.

Initially, the children traded with a currency of small sharp stones, which was soon replaced by a paper currency called SSS with the symbol $$. From play-selling stones, sticks and leaves, the shops now deal with paper planes, masks, magazines and a whole range of other merchandise. Badri Baba has religiously published Sirius for six months now. Other friends produce magazines in their homes. There are online shops and e-magazines, and a Central Bank which controls money supply. New entrants get interest from the bank for six months to get them going. There is also a cap above which the bank stops giving interest. These socialist tendencies developed without any adult input (believe it or not).

It is indeed heartening to see children being inclusive and gentle with their rules, in what is inherently a competitive activity.

From the foregoing, you would have realised that what concerns us is how the boys relate to one another and to others. Relationships are what constitute the fabric of life; what all of us agonise about, and what gives rise to heartache or contentment.

“... what concerns us is how the boys relate to one another and to others. Relationships are what constitute the fabric of life; what all of us agonise about, and what gives rise to heartache or contentment.”

First, we woke up and started talking.

Then, after getting out of bed we went to the door and our dog, Bagli rushed in to meet us! We took her outside and went with her to the rock near our house, called the ‘Hippo Rock.’ Then, we did our breathing exercises (of course, Bagli didn’t do them).

Then, we were with Bagli until it was time to drink milk. Then, we fed Bagli and started doing ‘Potato Head Magic.’ Some years back, we had a Potato Head Memory Game. After a few weeks of playing the memory game, we started drawing Potato Heads. Then, our grandfather gave us some Potato heads which he had printed from the internet.

Today, which is February 6, the day after Mr. Potato Head’s birthday (February 5, 1975) we put some of the memory-game cards in a pile. The pile is picture-side down. You need to turn the top half of the pile picture-side up and put it next to the bottom half, which will still be face-down. Then, take the top card from the face-down pile, and the magician can tell which card you have picked by just looking at the ‘magick row’ of cards which he has elsewhere!

This is how the magician does it: First, he takes the memory-game cards and makes two identical piles. Then, he spreads one pile into a row (the ‘magick row’) and the other pile is given to you to remove the card from. Then you turn the pile picture-side up, the magician looks at the ‘magick row’ and checks which card comes next. That will be the card that you just picked!

The previous day, Varun’s cycle had fallen and the seat had broken, so today he tried riding my cycle, which was bigger than his one. After a few minutes, he learned how to ride it!

After lunch, when Varun was going to get out the cycle, we saw a bronzeback tree snake and took some pictures of it. Then, I was writing Sirius (sentence incomplete). Last year, one of our friends, Lavanya, had started a rock garden. We all had rock-gardens, where you keep all the interesting stones, sticks, etc. that you find. Lavanya said, “if you want any of the rocks from here, then you can give me another rock which is the same shape as the one you want, and I’ll give it to you.” We also started shops. I started Dracoshop and Varun started ‘Noctis Labyrinthus’ (a place on Mars). Later, lot of other friends also started playing the game. Then, we started using only stones which were small and sharp. But people didn’t use the money they earned to pay — they just picked up other stones. So we started using paper notes, which had a stamp on them. We called them $$ — Small Sharp Stones. The only problem was that there weren’t any ½ $ notes! Another thing we had in the $5000 was a Museum called ‘Gueve Crater,’ also named after a place on Mars.

One of the things we sold were books and magazines. I have a fortnightly magazine called Sirius. It has 20 A5-sized pages. I was writing an article on Potato Head Day (Mr. Potato Head’s Birthday) in that magazine.

At tiffin-time, I stopped writing and had tiffin. Then, I was watching a talk on the computer. After that, the cycle chain guard had come off, so we were fixing it on with a nail. The nail got lost, so we used a magnet to look for the nail. Then, we fixed the chain-guard using a nail and some string. After cycling a few times, the string snapped, so we removed the chain-guard completely.

After that, we started writing this article.

Then, Bagli found our spaceball, a ball which makes a noise when you bounce it. We took a video of that and then wrote what you’ve just read. And this. And this. And this...
I am from a village where there is no guarantee of any quality in education and there is no chance of growth without energy and advanced technology. But I was lucky to have received an education, because many thousands and thousands of children in Indian villages are not as fortunate. That is why I feel strongly about access to quality education at affordable costs. I am a part of Education Park because I think access to quality education at affordable costs is the key to one's growth. Without proper education, one cannot think of a bright future for a child and hence for India.

Since rural population forms a large share of India's population, taking care of rural education is an imperative task. Not only child education, but the growth of the whole rural society is required. Comprehensive growth of rural society will ensure that educated children of villages contribute to their own growth. I think the future of India lies in the future of its innumerable villages. Therefore, Education Park is an important endeavour in this regard.

**IT IS NOT ONLY A SCHOOL**

In the modern era, where the world's economics are knowledge-based, education is an integral part of social and economic development. India has progressed significantly in the last 60 years, yet of the odd 5,94,000 villages, there are many which don't have a school or even if they do, the quality of education is very poor.

Poor quality of fundamental education ensures that students are not competitive enough to enroll for higher education (i.e. middle and high school). And if the student is competitive enough for higher education, he or she may not have access to such schools. For example, in Khargone district of MP, there is typically one middle school for every four primary schools and one high school for every 35 primary schools (Source: Sarva Siksha Abhiyan Year 2006-2007). Poor connectivity between villages due to poor road infrastructure makes accessing higher education more difficult. Due to this, in Khargone district, only 11% of the district population gets education up to the higher secondary level, and merely 4% are graduates (Source: Census of India, 2001). The story of more than 600 districts of India is similar.

**NOT DIFFERENT EDUCATION, BUT EDUCATION IN A DIFFERENT WAY**

The Sarva Shiksha Abhiyan (SSA) is the Government of India's initiative for achieving universal elementary education. The budget for the SSA was about Rs. 24,000 crore in the year 2008-09.

Primary education in India has a decentralised model. Many schools either exist or are currently being built under SSA in nearly all rural areas, separated by only few kilometres. But these are buildings not schools — they lack the required number of teachers and have poor infrastructure to impart the kind of quality education required today.

Let me explain. 5, 94,000 villages have an average population of about 1,100 people. A primary school should have at least five teachers. Five teachers per village accounts for about 0.5% of India's rural population, and 0.5% of our population devoted to becoming qualified, motivated and dedicated teachers living in rural areas is an impossible expectation, considering today's rural literacy levels and the lack of facilities in rural areas. So, many schools are left without sufficient teachers.

Also, most of these primary schools are built in a small area. They invariably lack proper playgrounds, space for group activities, pre-school facilities, availability of books, availability and use of computers, etc. These are essential elements of today's education. To use sufficient infrastructure for targeting quality education is similar to trying to switch on a Silicon diode with 0.3 Volts supply, while it actually requires 0.7 Volts. The diode will never be switched on even if you supply 0.3 Volts all your life. Quality education will never be imparted even if you spend Rs. 25,000 crore a year.

**RURAL DEVELOPMENT REQUIRES MORE THAN EDUCATION**

Let us assume that the quality of education in rural areas is good, and produces well-educated children. Such growth of a child, which happens without the growth of the adjoining society in which she lives in, will create an imbalance. An underdeveloped society will not have the capacity to absorb or employ a well-educated child. The educated child will not have any other option, other than to leave her present society and go elsewhere in search of a job. Due to this, the contribution of the rural child in her society's own growth will be minimal. Therefore, not only the child, but the whole society in rural areas must grow together. This comprehensive social growth requires not only the education of a child, but better health care, better economy, more energy and greater use of technology.

For instance, there is a huge scope to improve the efficiency of farming in India. It requires training farmers to empower them while choosing the right fertiliser, picking the right seeds, getting information about government schemes and on how to avail soft loans. Also, training farmers to use the internet to access weather information and crop prices would be very useful. These efforts should lead to better 'economy' of the region.

Other than education and economy, there is another important component of rural growth, energy. Our electricity generation and distribution network has not reached everywhere. There are about 80,000 villages (source: Ministry of Power) which do not have access to electricity. Those areas which do have access to electricity suffer from terrible power cuts. The availability of energy has the potential to play an important role in improving both education and the economy.

**EDUCATION PARKS**

Our government is not able to provide a desirable solution. Yet, considering the size of our country, it is only the government that can bring about a change at the national level. I would like them to consider the idea of creating an Education Park.

An education park is envisaged to work in the area of education, economy and energy, the three ‘E’s necessary for social development. The aim of an education park is to provide high quality but affordable education and training in rural India. An education park will provide high quality education through trained teachers. It will also focus on hands-on learning. Students will spend about 25% of their school time outside the classroom to learn by experiments and experience.

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In summary, an education park is just not a school but much more: it is a model for the comprehensive growth of rural areas.
Navnirmiti – How to make a Difference

Teaching is not my thing. Let me clarify, teaching in the usual way is not my thing. Ask me to get a bunch of students excited about what they’re going to learn — now that is a challenge. Ask me to handle a bunch of kids with really short attention spans, to listen in order to get them excited — it’s harder than rock climbing. In most cases, parents don’t ask such things of schools. When they and schools do, answers like Navnirmiti pop up.

Navnirmiti (NN) is a trust society that works to universalise elementary education in math and science. It uses low cost/no cost methods for providing learning materials and teacher support, to develop a better student-teacher bond and to help children grapple better with abstract subject concepts. The emphasis on low-cost/no-cost materials from the outset means that a teaching kit can be immediately universalised — it can be used by low-income schools and rural schools.

THE REASONS WHY

Navnirmiti believes that knowledge should be free. It should be available to everyone at no cost or at very low cost, irrespective of his/her class, caste, gender and geographical location. Mathematics is the language of science. Without mathematics, people are denied access to science. Ignorance of basic mathematics is a major obstacle in the educational, economic and social progress of our people, especially the underprivileged. To universalise education, it is necessary to ensure that children are taught using those materials which are easily available, low-cost and locally produced. They can be easily replicated. Also, the method of teaching should involve thorough understanding and not learning by rote. Children might proceed to the next level only when they are confident with their current knowledge base.

The emphasis on low-cost/no-cost materials means that a teaching kit can be immediately universalised — it can be used by low-income schools and rural schools.

In the past, caste and class structures have deprived major sections of the society of basic education. Recent social movements have opened wide the doors of education. Children from deprived sections are studying in government schools. Many teachers in these schools are the first or second generation learners from their families. Both have just entered the processes of knowledge. Now, the impact of privatisation is working towards pushing them out. Hence, it is extremely important to strengthen the government school system and provide good quality education in these schools, along with strong academic support to the teachers.

HOW TO UNIVERSALISE MATH EDUCATION?

Over the years, Navnirmiti has developed a comprehensive, structured system for teaching primary school-level mathematics. Their pedagogy is based on reality and activity-based content, dialogue methods and the ‘thing symbolic’ approach. One important discovery made during teaching activities was that the difficulty children have with mathematics is largely linguistic and not conceptual.

Learning a new subject in an unfamiliar language is doubly difficult. For example, many brilliant students from the vernacular streams fall in college, because of their unfamiliarity with English. Their learning problem is not conceptual, it’s linguistic. Similarly, children have a double difficulty learning math the traditional way — the alphanumeric language, i.e. through written numbers and symbols. Writing and numbers are two new abstract skills which children are just beginning to learn. The alphanumeric language is a new and unfamiliar language for them. Mathematical operations like addition and subtraction are unfamiliar abstract operations. Learning addition and subtraction in the alphanumeric language involves a double level of abstraction. For children, it means learning a new, unfamiliar, abstract skill in a new, unfamiliar, abstract language.

THINGS-LANGUAGE APPROACH

The learning process, therefore, must be broken into two stages. First, teach the new abstract concept in a familiar language. Second, translate the familiar language into the alphanumeric language of writing and numbers.

What is this ‘familiar language’ in which we should first teach abstract operations like additions and subtractions? A language in which children most readily understand mathematical concepts is the language of ‘thing symbols’. Things used in a symbolic manner. They use the term ‘thingol’ to denote ‘thing symbol’. Cuisenaire rods are excellent examples of ‘thingols’. With the help of Cuisenaire rods, children actively learn to estimate and match lengths. When they can do this consistently, they have intuitively grasped the concept of addition and subtraction, without mentioning numbers. Navnirmiti has developed a wide variety of thingols to teach all aspects of primary school mathematics. Navnirmiti has also developed a definite sequence in which various topics are taught, so that the child proceeds from understanding to understanding, developing confidence and skills along the way and most importantly, a liking for mathematics.

The transition from real life mathematics and things-language to alphanumeric language is a real problem for children, and if the method incorporates thingols and other tools for a smooth transition, every child in each class can master mathematics.
On some days, the school building resounds with the bang of hammers and chisels as older kids practise their carpentry skills. In one class, a minor explosion has the kids giggling as they figure out what happens when two substances are mixed together; in another, tongues wag excitedly over the Laws of Motion. Practical experiments dominate every lesson, followed by lively discussions on the theory involved. Everywhere there is activity, thinking, brainteasers and what-ifs from the teacher, there is reasoning and deductions enticed out of children.

Education of the head, heart and hands are all equally important for the development of the child, and this is the foundation of the Steiner approach. Each step ahead is marked by the physical and emotional needs of the growing child, as opposed to conventional school systems.

From nursery upward, little fingers are kept busy working with real materials on real projects, the utility of which penetrate a darkened room, the teacher can introduce the study of optics.

Science is taught from appropriate phenomena — not as a procedure. For example: from music begins the journey to studying the more scientific aspects of sound. From the phenomena of light and colour, the artistic activity of painting or by simply observing a single ray of light penetrate a darkened room, the teacher can introduce the study of optics. A sense of awe and wonder permeates the phenomena of light and colour, the artistic activity of painting or by simply observing a single ray of light penetrate a darkened room, the teacher can introduce the study of optics. A sense of awe and wonder permeates the phenomena of light and colour. From concepts gained in other natural scientific studies, the dependence of industry and transport on chemical and physical processes are dwelt on at some length, with examples.

"Receive the children in reverence, educate them with love and send them forth in freedom", is probably the most well-known of Steiner’s quotes, and it explains the entire philosophy and culture within which Tridha operates.

Education grows into a union with life that serves the Waldorf students for life, creating an enthusiasm for learning, a desire for discovery and an ability to cause change. By the time they reach college and university level, these students are grounded broadly and deeply and retain a remarkable enthusiasm for learning. This consistent curiosity and desire to change form the perfect heads, hearts and hands that, when joined to a task, can transform our world.

What We Learnt in School Today

RUDRAUTT RANADE (12) AND BHRIIGUEV RANADE (8)
Campus Kids From Tridha

RUDRA’S DAY

Today we were preparing for our open house. We were setting up our chemistry experiment — a project based on the fact that fire consumes oxygen. We took a bowl and half-filled it with water, then we put a candle in the middle and lit it, then we covered it with a plastic bottle with a hole on top which had a piece of pipe in it, then we put the bottle on top of the candle and it became airtight. We closed the pipe and the flame went out because there was no more oxygen left, then the water level rose in the plastic bottle. If you breathe through the pipe you will cough, because all the smoke comes out.

Vihan, Kapal, Priyansha, Astha and I are doing this. There will be many experiments and our parents will be shown these. Some of us will set up the books. We have an area each for Astronomy, History and Geography, and a separate area for Maths, English, Hindi and Marathi.

Parents will come and we will open the best pages for them to see. My geography cover is being shown. I have drawn footballers since we were studying Europe.

We are displaying woodwork and handwork. We have made shoes and embroidery on cloth. Boats were made of wood. Bevan made the best boat, very streamlined and perfect. There were no chips; the place to sit was quite deep. It looked like a real boat.

There was a lot of chaos today when we set up our books, but in the end all went well. It was Vallari’s lunch turn today. She brought chhole, chapatti, rice and dal for everyone.

Everyone said they won’t be playing Holi on Monday. In school, we had a screen of cloth tied to two pillars and there were buckets of paint. We put our hands in and made handprints on the canvas, we threw mugs and buckets of paint on the canvas. We got wet and dirty.

BHRIIGU’S DAY

We made poppies today. First we cut out a hand out of paper, we painted it in any colour, we dried it, then we circled it like this. The fingers going all around and the thumb sticking down. We taped it with a Jhadu stick. Then we needed to make two leaves and it was done. You could paint them or colour them. I didn’t make the leaves.

For Holi we painted a bonfire on a cloth. We made it with red and yellow and it was very nice. This was our activity. We didn’t use water since there is less water in Mumbai.

For the open day, me and my friends have arranged the class with our teacher and it is looking beautiful. All our books are closed; you can pick any book and open it.

We built a wall in our new school. We made 16 lines and class five told us we put 1,012 bricks, good job! I put 29 bricks. With the thappi we put the cement. One by one we all put the bricks. We had a lot of fun. We sang and worked — all songs were from class three. We felt very strong and alert when we built the wall because we did three lines in a day and our turn came so quick. We did this for our block on house building.

Art is what I like best in school. We do our paintings very well. We painted the Dandak forest because we are learning the story of Ramayana. The boathouse painting was the best I did in class three.
Human relationships form the crux of our lives. It is surprising to see how closely this emotional aspect of living life is neglected in conventional schooling practises. The learning environment I have in mind is centred on children exploring the world around them with each other. It's a vast learning space where you can combine to introspect and nurture your knowledge. You can't pass or fail in an environment, simply soak yourself in it and nurture your knowledge. I want to create a learning space which is child-centric instead of concept-centric. This means that there won't be any time constraints on either the facilitator or the child. Learning anything needs time, patience and a freedom from constraints and obligations. In the 19th century, an aesthetic movement swept the world of art and literature; it's calling cry was 'Art for art's sake!' I want to bring back that sentiment to education — learning for learning's sake. It is important that children learn things because they want to know more, they want to satisfy their curiosity or go after something that fires them up. Not only will it make education a holistic, dynamic, interactive and self-enriching journey, but it will help the child to introspect, reflect and understand himself or herself as a person.

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Many times, learning something is associated with boredom and being forced to learn something not because the child wants to, but has to. (All those who positively hated Social Studies in school, say aye!) What is learning without enjoying what you learn? We need to understand the larger picture of what we want a child to understand from her schooling. Do we want to develop their confidence and self-esteem so that they have the courage and conviction to actually follow their heart, or do we want them to learn how to suppress their inner voice and follow the herd, simply because it is safe and viable? A simple question to more than half of the present engineering students in India — who are you doing engineering if you crip so much about how you hate it? — reveals this phenomenon is already deeply entrenched in our psyche. They simply answer, "because we didn't know what else to do," or "everyone else was doing it, I went along with them".

Human relationships form the crux of our lives. It is surprising to see how closely this emotional aspect of living life is neglected in conventional schooling practises. The learning environment I have in mind is centred on children exploring the world around them with each other. They learn how to admit mistakes, how to approach their own and other people's work, how to stand up and be honest, how to forgive each other and themselves, all simply because what they learn is closely intertwined with constantly having to interact with other children. This means more group activities, more plays; more collective projects, for example asking children to build a small mud-house. I choose to include emotional interaction as an important part of what children learn when they are young, instead of having to read books like How to Cooperate without Killing — Seven Easy Ways to Become an Efficient Team-player when they are already employed with an organisation. Being sensitive to what others are feeling not only helps the child to understand what she is feeling, but makes her a compassionate, intelligent, thoughtful human being. Many medical students feel that they ought to be taught how to handle patients with terminal diseases, how to break bad news to families of patients, along with their routine studies. This shouldn't simply be a function of how experienced you are as a doctor. It should be a part of you as a person. Emotional growth is an important part of what education is about in my school.

It isn't a very original thing to say that our present education system is crucially flawed. But it is important to understand exactly where and why the problems and empty spaces lie, so that endeavours to create alternate learning spaces don’t crumple at the same places. Considering our mammath population and the overwhelming need for a literate generation-next, policies for education are usually mass-based. One of the keywords in the Annual Report (2008-09) of the School Education and Literacy Department is “universalizing elementary education.” Education, therefore, is meant to have quantitative and not qualitative priorities. This attitude doesn’t stem only from Third World countries with population problems. It is actually a product of the Western schooling model, which designed its schools to suit the needs of the Industrial Revolution — the requirement of a large class of people who were literate, skilled and conformist in nature (Sir Ken Robinson, TED).

This model was then adopted by us during the later stages of the British rule. A subversive by-product of this policy is that evaluation procedures are also based on a criterion which is universal, standard and easy to implement across age, race, gender and culture — marks. Not only does this strict system kill the joy and spirit of learning, it also denies individual spirit and imagination, making people subconsciously alien to their own feelings and aspirations.

By being judgmental to children for the first two decades of their life, you teach them to be judgmental as well. By inviting them to an open, exciting, introspective and loving environment to learn about the world, about others and about themselves, you create similarly open, exciting, introspective and loving individuals. If humans are a combination of their intrinsic qualities and their environment, take a moment to pause and think what education should really be about.

So what is education really about, then? I think there are two levels. On a personal level, you learn because you are intrigued by the mystery of something that you love. You want to understand it, immerse yourself in it, because its pursuit gives you joy. And the other practical level is that you learn things in order to equip yourself for the future. Sir Ken Robinson, a leading expert on innovation and human resources gives a startling insight into this aspect of education, by saying that if we don’t encourage free thinking and risk taking among our children, how will we prepare them for something they cannot possibly anticipate — the future? And this is where, in his opinion, the importance of creativity comes into education. He says that creativity is as important as literacy. To me, creativity means that you want to create something original, yes, but it also means that you believe in yourself enough to want to create something which is completely your own making. Furthermore, Sir Robinson says that creativity arises from a confluence of different kinds of thinking — visually, through sound, through movement — which means the wholesome growth of the child. If we form learning processes which nurture creativity, we nurture their talents, encourage independent, diverse thinking and a spirit of actively taking an initiative. I cannot imagine a better preparation for the future.

On a personal level, you learn because you are intrigued by the mystery of something that you love. And the other practical level is that you learn things in order to equip yourself for the future.

As of now, these are my ideas on learning and I intend to implement all these concepts in my school. It may be an extremely idealistic and ambitious dream. But the driving force behind this dream is not simply my desire to reform the way we educate our children. The way they learn about our world now determines the way they shape their future. And the best way that we can help our children is by changing the ‘now’ in this equation — now.

Boarding up the Boards  ■ NIHARIKA KARANDIKAR  9th standard, Kendriya Vidyalaya, IITB

As a part of the initiative to “beef up” India’s education system, our honourable minister for HRD Mr. Kapil Sibal made a much-debated and controversial decision of scrapping the 10th standard Board exams. The decision sent a sigh of relief throughout the student community in India; some called it the perfect answer to an enormous compressing machine that our education system has become. But very few people have really thought of the implications that such a move might have on the quality of education being imparted to Indian children.

Exams: a word that sends a shiver down the spines of most students, if not all. Exams probably are the only method of testing the grasping and understanding prowess of a student at the moment. Though I agree the pattern of the exams put great pressure on children. Parental expectations, uncertainty about scores or simply fear are the main aspects that form this pressure.

If higher education is imparted at an equal footing all across the horizon, the need to run in a rat race to get to the most prestigious institute will be over.

Board exams reflect our capability. Working hard will surely help us overcome this challenge. Children come to know where they stand among their peers nationwide and then they can improve accordingly; whereas if they have to face Board exams directly in twelfth standard, they won’t have any idea of the competitive world outside. Board exams are the benchmarks of a child’s academic career, even though they might carry stress and tension with them. The Board exam is a necessary evil. They are there to teach things like getting your point across to someone you don’t know precisely and concisely, learning to analyse things and assigning importance to them, learning to make study notes, and learning to manage a schedule. Board exams enrich the competitive spirit of children and make them study harder for their future.

Audio School: IDAC document

Our Education System: Good Or Bad?  ■ SNEHA KHEDKAR  9th standard, Kendriya Vidyalaya, IITB

Often I’m asked, “What do you want to do when you grow up?” to which I reply, “Perhaps something in the field of science, probably research.” But when I sit back and think, I feel like becoming a teacher - not just to teach children, but to change their point of view of achieving excellence, not good marks.

At times, children don’t see how much knowledge they have. They measure this knowledge by marks and not by how much they have understood. When they score less, they think they are not intelligent. Being in 9th standard, I have also seen my friends crying on getting a low score. I feel bad if I score less, but I feel worse about the stupid mistakes I make. No one realises that there is a positive side to scoring less; you get to improve and ensure that you don’t repeat the mistakes you have made.

We can’t hold children entirely responsible for treating marks as the most important thing. Parents are also to be blamed. I have often seen my classmates becoming tense due to fear of getting scolded at home, more than due to their exam results. In my opinion, parents should encourage children to learn, and not pressurise them to get good marks. Some teachers are also liable to telling students to do well in exams and focus primarily on marks. They are perhaps a more active part of our education system and they make it work as it is working right now.

This should change.

Teachers and parents must realise the kind of burden they put on little children who are like tender and delicate buds, unable to bloom into flowers. Our education system stresses only on marks and so the children also think that marks are more important than learning and they study only for scoring, not for learning something new.

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[Board exams] are there to teach things like getting your point across to someone you don’t know precisely and concisely, learning to analyse things and assigning importance to them, learning to make study notes, and learning to manage a schedule. Board exams enrich the competitive spirit of children and make them study harder for their future.

The immediate effect of being pressured and stressed out will dissolve. Thus, the solution to the problem seems more pragmatic if we look at it the other way round. Scrapping the Board exams will be like asking your battle-ready, trained commandos to pack up and go back home from the war zone... and that is completely unrealistic.
Our Education System: Good Or Bad? (continued from page 9)

The Central Board of Secondary Education (CBSE), realising the increasing stress students face, has just introduced a new system called Continuous and Comprehensive Evaluation (CCE). Under CCE, teachers evaluate students not only on the basis of their marks but also on other parameters like participation in school programmes, sports, attitude towards teachers, classmates, etc. CCE ensures that a student good at sports or other activities, not only at studies, is given equal importance. So, a child can also be promoted to the next class based on his/her grades in art, craft, sports, etc.

I would like to change a few things about the education system. First of all, all students, whether good or bad at studies must be treated equally and given equal importance. Teachers should help children in recognising their talents and nurturing them, no matter which field those talents might be in. Also, children who are not so good at studies must be encouraged to learn for the sake of learning and not for the sake of obtaining marks.

Last but not the least, the viewpoint that marks are the most important thing in the world must change. Children should be told that marks or grades do not necessarily say whether one is intelligent or not. It is how much one understands and how creative he/she is that decides whether he/she is intelligent or not.

The education system, being structured, may benefit average or poor students who are not capable of taking decisions about what they want to do independently.

Though these are some negative points, our education system has some positive points also. For instance, it stresses on important subjects like Maths. Also, the system is structured and has a well-defined plan. This may constrain good students interested in pursuits other than academics, i.e. a person interested in singing may not be able to pursue it as a hobby due to lack of time or freedom; but the education system, being structured, may benefit average or poor students who are not capable of taking decisions about what they want to do independently. A student who is not able to decide which subject to choose does not have to worry much as not too many choices are given in the first place.

If they do not do well (i.e. get good marks), they are criticised by their parents. There are a few of us who do not even know our talents, as there are no opportunities to explore them in the system.

Alternative Education in France – a Utopia? • CLAIRE CHAIZE  French Language Teacher at IITB

With the new school reforms currently in force in France, which are far from being unanimously accepted, many parents are turning towards the so-called ‘alternative schools’. In France over 700 schools, mostly private – and quite expensive too – claim to follow methods of progressive education. “Freinet,” “Montessori” and “Steiner” schools bear the names of the specialists who invented new teaching methods, which are opposed to traditional education.

In France over 700 schools, mostly private – and quite expensive too – claim to follow methods of progressive education.

These people, who were respectively a French school teacher, an Italian psychologist and an Austrian educator, all struggled in the early twentieth century, against an education system which was too exclusive, constrained, hierarchical and competitive. Their basic principle was to place the child at the centre of the school system and adapt it according to its needs and capacities. Their credo: the child is like “a spring that gives forth and not a vase that is filled” (Maria Montessori).

A century later, one wonders if these methods haven’t become too old or “utopian” and whether they have adapted to our times. The program of these schools show that the philosophy remains the same but the teaching means have changed keeping pace with the introduction of new technologies. Many school teachers now use computers, internet, video in their classroom as the primary tools of expression.

This does not deny of course the essential values imparted by alternative education that include human interaction, communication, self-expression and cooperation. Notably “Steiner” schools try to complement academic matters with artistic and manual works (drawings, collage, dance, etc.) which is evidence in the improvement and fulfilment of the students.

(Continued from page 9)

If I Become a Teacher

MUGHOA KHEDKAR 9th standard, Kendriya Vidyalaya, IITB

If I become a teacher I will, First try to become a friend. I’ll interact with students informally. Beating will come to an end.

No competition will be based on numbers, The winner will be who takes part in the class. Children will freely express their views, Their aim won’t be to score good marks.

No child will be insulted in my class, No child will be discouraged if he fails. He will be taught the importance of education, A child with any talent will be praised.

I won’t put pressure on my students, I will ask them to study with pleasure. I will give them free time to relax, Their happiness will be my treasure.

Children not interested in studies, Will be shown positive sides of learning, I will take special classes for them, Where they will study with ease.

I hope when I become a teacher, The number of suicides will decrease. I know, one teacher can’t make a difference, But if we all come together, such incidents will cease.

The Blog of a Freinet School in France

Testimonies of Leo and Janis

3rd grade students.
Tuesday, February 2nd

Nathan and Sarah are calling our names to see if everybody is present.

Karl reads the schedule. Douinia and Corentin do the ritual of English.

Afterwards, we do the geometry: there is a group that is with the teacher. We look for angles, we measure the perimeter of figures. Another group is creating a geometric drawing with points or squares.

Then we do English: Anaëlle reads an English book, Lea shows the flashcards and ask what it is. Then we do a dictation of numbers and letters in English.

Then we go eat in the canteen “bio”.

After the break, we begin the “council”. Nathan is the President and Leo moderate the debate We decide to do calligraphy in the fall.

After the council, we work on word families. Then we play the game of sell and buy and we do the dictation of numbers and letters in English.

If I Become a Teacher
In school, I was a good student, though never a goody one. Looking back, what I remember about school has very little to do with what I learnt in the classroom. When I was not plotting my next prank, I could be found sitting in class, corporately present yet mentally wandering in daydream land. School was each primarily for the friends you had, the subjects you loved and occasionally, for the special teacher or two who managed to capture your imagination. Those are the teachers that I remember with gratitude to this date.

There are teachers and there are those who I call real teachers — the kind who have a special antennae which can always sense pranks and pesky undesirables such as chewing gum, who never seem to take no for an answer, unless it is written in a complete sentence. They are the type who probably cannot walk past a crowd of kids without straightening up the line and clothes (and pigtails too) for good measure. Over and above everything else, real teachers are those who teach as if they are opening windows; they know your true potential even when you don’t. They always have time to listen to you, no matter how busy they are. They know that they teach students, and not subjects, and are truly irreplaceable. The profile for this issue gives you a sneak preview into the world of Ms. Manjuli Sharma, an English teacher at our very own Kendriya Vidyalaya. Is she the real deal? Well, that is for her students to decide and for you to gauge from her responses.

Introduction by DAMAYANTI BHATTACHARYA

Ms. Sharma, how about the usual ice breaker — the ‘how’, ‘where’, and ‘when’ you got into teaching as a profession?

My career as teacher is testimony to the fact that life-changing events are often more a product of chance than design. I am the daughter of an army officer, who started her career in teaching in Shillong (where my family was posted then) at the local BSF school. Teaching at that stage was not a conscious career choice, but more of a stop-gap measure while I decided what to do with my life. Chance played its role in the form of a friend who was filling up the KV form and decided to submit an application on my behalf as well, even though I myself had shown no interest in the job whatsoever. Eventually I got the job and my first posting was in 1980 at KV Upper Shillong. I applied for a transfer in the early 90s. Mumbai was not my first choice, but here again chance (or maybe I should say the Fates) had their final say. I was granted my third choice (Mumbai) and joined KV IIT Powai in 1993, a move that I have never regretted till date.

How many classes are you expected to teach here?

We are expected to teach four sections, from standard six to ten, and these sections change every year. We do tend to move along with the same class as it gets promoted, but this is seldom all the way up to the tenth standard.

The most stressful part of the job — corrections... for what you correct is what they will reproduce.

Is that a good thing?

Children sometimes welcome and respond better when there is a change in their teachers. There are also operational issues such as matching timetables, etc. But personally I would love to coach and groom a single class all the way up to the tenth standard. You have more time to get to know each student individually with greater intimacy, and an improved chance to mould them to realise their full potential.

What distinguishes the older students from the young-er ones? What is your personal take on the students?

Students who study in this school are extremely focused, more competitive than other students, and come from highly educated backgrounds. They are more inclined toward science subjects, and almost everyone wants to get into the science stream after their tenth.

The youngest lot are undoubtedly more affectionate and receptive, while the older kids are more aware and extremely well-informed, so much so that you have to be perpetually on your toes to keep up with them. The older ones are prone to sulk when reprimanded but it seldom lasts long. What is common to both is the affection you get from them.

My personal credo for students is that they need equal parts of affection, attention and discipline. I tend to spend quite a bit of time with them outside the classroom, be it informally or as Guide Captain of the Bharat Scouts and Guides. I am also in charge of the school band, which is a one of a kind band within the KV Sangathan. I am a firm believer in the importance of extracurricular activities along with academics, in the overall growth of a person and I try to encourage all my students in this direction. As a matter of fact, during the holiday season when everyone is off home to their native place, I seldom get to take off. I can usually be found in a camp, either with students or with a group of teachers. But I love it that way.

I have often heard that KV IIT Powai is different from other Kendriya Vidyalayas. Would you agree?

Students who study in this school are extremely focused, more competitive than most other students, and come from highly educated backgrounds. It is not the same in other KVs. Not only are they academically inclined, but they also seem to take to co-curricular activities, be it dance, music, debating and elocution with equal gusto. As a matter of fact, there is an inter-school competition in some field or the other every month, which our students participate in. They are more inclined toward science subjects and almost everyone wants to get into the science stream after their tenth. As an English teacher my only complaint, if it can be called one, is that they often consider English to be an “easy subject”. When students don’t perform well in it, I often have students and even their parents asking me, “but she is so good in Math, why has she got such poor marks in English?” The truth is that learning a language well and getting a feel for literature is not that easy, and cannot be taken lightly.

What is the most stressful part of your job?

It is corrections. We have to correct homework, classwork, test papers and cannot afford to be lax anywhere. What you correct is what they will reproduce. You cannot afford to make even the slightest mistake, and so it comes with its own pressure of responsibility. Personally I feel that the acquisition of knowledge should not be exam-oriented, and you cannot judge the intelligence of a child through an examination. That is why I feel that CBSE’s move to do away with Board examinations and replace it with continuous summative and formative evaluation is a step in the right direction.

Personally I feel that the acquisition of knowledge should not be exam-oriented, and that you cannot judge the intelligence of a child through an examination.

Now the inevitable question: what is the most rewarding aspect of being a teacher?

The unconditional love that you get from your students, and the fact that they remember you long after they have left school. I have often met some of my students, successful, grown men and women who come forward to speak to me and often touch my feet. I can tell you there is no greater sense of fulfilment! I love being with students. They have left me young at heart and tension-free. I attribute where I have reached today to the support and cooperation of my colleagues and principal, and more than anything else, to my students.

Ms. Sharma’s achievements are not to be sneered at either. She is a recipient of the President’s Best Teacher Award and the President’s National Silver Star for the Bharat Scouts and Guides. She has received numerous awards from different quarters. But more than the accolades, it was the fact that she is a passionate lover of all animals and strays, as well as the fact that she displays an unbridled love and enthusiasm for teaching, even after so many years at the job, that convinced me that KV has its own share of inspired teachers. Come summer when my son arrives here, I know that he will be in someone’s kind and capable hands. ■
Theatrical Feats

ANTARIKSH BOTHALE
3rd Year Undergraduate, Mechanical Engg.

Every year, the University of Iowa, renowned for its Creative Writing programme publishes an anthology of creative writing by graduating students. What distinguishes this anthology from a hundred others is the wide variety of stories, be it in their style, technique or theme. IIT Bombay’s Annual Theatre Fest this year featured performances which possessed a similar sort of vibrant mix. There were some excellent professional plays, including Ismat Aapa Ke Naam and Hum Kahein Aap Sunein, directed by Naseeruddin Shah and Nadia Zaheer Babbal respectively. In enthusiastic stead were the student plays, directed and produced by Fourth Wall Productions, the Dramatics Club of IIT Bombay. Adding the bright twist was Afsaneh: Bai se Bioscope Tak, a dance drama about the nautanki and baithak culture in Indian theatre, filled with live songs and performances. Spread across five days, this year’s Theatre Fest was a ready reckoner of the dramatic talents of India and within IIT Bombay itself.

Day 1

I was looking forward to the first performance titled Ismat Aapa Ke Naam, an enactment of three short stories by the famed and controversial Urdu writer, Ismat Chughtai. The stories enacted were Chai-Mui, Mughal Baccha and Ghurawali. In all honesty, I was there because I had often seen Manoj Pahwa (one of the actors) on TV and I wanted to see him perform live. Also, the show was directed by Naseeruddin Shah, and that was surely another attraction.

Ismat Chughtai is a master story teller of the modern Urdu short story genre and perhaps the last chronicler of Uttar Pradesh’s Muslim culture and its associated semantics. Once the performance began, I realised that this was a story-telling session which was all about language. The script, heavy on Urdu, might have made it slightly difficult to understand for quite a few people (the audience did begin to get a bit restless towards the final performance) but to hear the mischievous rhythms and graceful cadences in the narration was quite, quite special.

With no change in the original dialogues, a natural narrative style and minimal props, you could easily immerse yourself into the tale. This was possible despite having only one actor for each story. From the beginning of the performance, we were transported to the ethos of a middle-class Muslim family in UP. Chai-Mui told us the story of a pregnant Bhabbhi Jan from the eyes of a young girl. The contrasts between the pampered, rich Bhabbhi Jan, and the poor rural woman who gave birth to her child on a train hit me in the face.

Mughal Baccha was about male dominance in our families and the sufferings of the women folk as a consequence of this. Finally, the story of Ghurawali — a social satire on how the same woman can be deemed acceptable or not based on the needs of the men around her finished the entire show.

All in all, it was a pretty impressive show. My personal favourite was Manoj Pahwa’s rendition of Amar Bel.

Day 2

Afsaneh: Bai se Bioscope Tak brought back the age-old form of nautanki and baithak. It was the story of Gulab Bai and Beni Bai, two women who entered the world of nautanki and baithak dancing at a very young age, and rose in the world of music and dance, at the other end of the spectrum. While Gulab Bai’s overly dignified composure, Gulab Bai’s enthusiasm of a small girl describing her day to her mother and the extremely hilarious Hindi philim dance, complete with flashy clothes and loud moves, the audience had enough to chuckle about. I was very impressed by the live rendition of the songs and became an instant fan of the lady who not only wrote and composed the songs, but also sang all the compositions used in the play. All in all, it was my favourite performance among all the plays in the Theatre Fest.

Days 3 and 4

Days 3 and 4 were devoted to IITB performances. Since last year, selected plays by IITB students are staged during Theatre Fest, to give them a bigger platform. Rivaldo, an ITB aluminus and stand-up comedian was the host for both the nights, kept the audience entertained with his filler performances. While a few of his jokes were standard and recycled, he did manage to give his audience a decent laugh. The plays shown this time covered quite a spectrum. What’s in a name? — Snehil Gautam’s monologue delivered by Kataria was an example of awesome script-writing and flawless execution. Noli ke Kutte featuring Kataria and Aniket Behera proved that it had deserved the first place at MI this year.

The two days of IITB performances did showcase a variety of drama genres and some of the best performances of the institute.

The story was about two soldiers, each from the Indian and Pakistani fronts and how a rough-edged friendship develops between them. They are the only two soldiers for miles around in their respective territories, and a mutual loneliness draws them to each other. Their friendship has to obviously remain a secret from each of their superiors, and the play traces the constant hide-and-seek they play with their senior officers, and what happens as a result of their secret. Next up, Tushar (aka Moody) had the audience in splits with his stand-up comedy act on Modern Mahabharat. Digging into Facebook, IIT lingo and a host of other mines of youthful expression, Moody literally recreated the Mahabharat which had everyone, across age-groups, guffawing and giggling breathlessly. Later, a group of freshmen and sophomores presented Reflections that brought a mime-act to IITB’s stage for the first time. The first play on Day 3 titled Push had a rather unique script, but fell flat because it could not hold the audience’s attention. It was a new concept which I guess could have been used pretty impressively. The audience did get a laugh watching the female character pushing, shoving, beating and slapping the male protagonist throughout the play. That was a pity, of course, since the play was supposed to be a serious one.

An adaptation of Premchand’s Shatranj ke Khiladi, executed impeccably by Surya and Snehil was the toast of Day 4. They managed to entertain the audience and hold their attention through the Urdu-rich play, set in the 19th century.

Phoenix, a comedy play on Day 4 would have been entertaining (despite its slapstick humour and clichéd jokes), had it not stretched to 50 minutes. All in all, the two days of IITB performances did showcase a variety of drama genres and some of the best performances of the institute.

Day 5

Day 5’s performance, Hum Kahein, Aap Sunein was to showcase Daastaan-go, – the art of reciting dastans. Dastans are traditional romantic epics that are related to the 1001 Arabian Nights, Panchanatra and other common pools of stories and narratives. The three main actors were excellent, and though the stories they narrated were pretty commonplace and clichéd, the style of narration and the perfect use of background music helped make the performance look really impressive.

The three Dastangoi performances were bound into a drama, but the script itself did not seem to have much substance, and it looked more like an attempt to string together individual Dastangoi acts. Because of this, the performance did seem to stretch out a bit and my attention seemed to waver, specially in the beginning when the act seemed to be full of small talk. However, it picked up pace pretty soon, and ended well.

The Theatre Fest wrapped itself well, in a package that bit into every taste and texture possible. From the nuanced and practised ease of the professional plays to the youthful exuberance of the plays by the students, the audience was thrilled and relished the plays till its last drops. I only hope that the tradition of bringing theatre to our institute continues and keeps reinventing itself, year after year.
Moriarty Were Here

JAYA JOSHI

Seen those signs which say: “You Are Here”? For as long as I can remember, I’ve been trying to place myself somewhere, in a final sort of way. Each time, so far, has been more transient than the last. So, when I heard these lyrics, “If you remember you’re unknown, Buffalo-land will be your home…” (from the song Jimmy, written, composed and sung by Moriarty), I knew it had something in it for me. It’s a song for people away from home — whatever be the meaning of home.

Moriarty is a well-known Paris-based music group. These thirty-somethings raised in France have far-reaching cultural roots and genetic diversities, from French, American, Swiss and Vietnamese parents. Rosemary, Arthur, Stefan, Thomas, Charles and Vincent are the current group members. Rosemary, with a background in classical music and opera, is the vocalist with a crimson voice. She plays the xylophone, spoon, thumb piano and tambourine. Arthur plays acoustic guitars, drum-suitecase and the piano. Stefan plays the double-bass, acoustic guitar and music box (and likes to sketch during conversations); Thomas plays the chromatic and diatonic harmonicas, drilling machines and Jew’s harp; Charles is on electric and resonator guitar; Vincent is the drummer.

Moriarty came to IIT Bombay to perform during the institute’s Mood Indigo festival in December last year. Besides Jimmy, they also played Cottonflower, Loveliness, Fireday, Jaywalker, Private Lily, Motel and Animals Can’t Laugh from their first album Gee Wha But This is A Lonesome Town. They also sang a cover version of Depeche Mode’s Enjoy the Silence and Tom Waits’s Chocolate Jesus. The concert was a musical wonderland. The one-hour performance got over too quickly. If you closed your eyes and travelled with the music in the austere setting of PC Saxena Auditorium — the dim lighting, the dark colours and the quirky yet well-dressed professional musicians on the stage could easily take you to a mid-range jazz club on the 46th Street between 8th and 9th Avenue in Manhattan.

Now, I’m no music critic. I’m just a listener who is open to all genres of music that sound good. So I will never be able to describe their music using terms like gothic country, avant-garde indie, psychedelic neo-folk and a slew of other labels. Because I have no idea what these are. But I do know that Moriarty’s music is a light, wispy musical occurrence that may or may not have occurred. Some say their music has a strong American tone, a bit of bluegrass, a bit of the mountains, harmonica and guitars, melancholia… some say bohemian gypsy strains. Some say cabaret. Arthur, who like Rosemary and Thomas speaks with a soft American accent says that he can’t really explain it all. “We’re like smashed little broken pieces of glass,” he heard him tell someone once.

After the concert, I got to spend some more time with Rosemary, Arthur, Stefan and Thomas when they came to stay with me at my place for a few days. They looked like family, brothers and sister, close friends or lovers. But I was still surprised to discover that they had been together for 10 to 15 years. Some of them, even more. Arthur and Thomas met a little after their first birthday at a park where Thomas saw Arthur shaving dry leaves in a drain and joined him. The rest of them got together by accidents mysteriously designed. I have a feeling they sniffed and found each other. How could these people be together for so long, and yet be so fresh and close?

One night while preparing dinner, I was in the kitchen and they were sitting around the dining table sorting and cutting vegetables, deep into a conversation. Among themselves they spoke in French, so I was trying to get a sense of what they were talking. It was spirited, loud, about someone or an event with sounds of fun, mockery and lots of laughter. I thought to myself, how wonderful this is. They look so comfortable. They probably know where they are and know where they are going. They have each other… and how much they enjoy each other’s company.

So when Rosemary came inside to help me in the kitchen I couldn’t stop myself from telling her what I felt. What she said or didn’t say after that was quite revealing. She said, “I think it’s your house that is special”. There was some mystery in the way she said it. Human relationships are complex and mysterious. So that explained it.

I didn’t know Moriarty from before the concert. And even now, I don’t think of them as ‘Moriarty’. After a series of long, simple, undulating, unfinished conversations, and silences, the mystery has continued.

Factual information about the band from the world wide web
Mood Indigo 2009 - Drink up me Hearties

KANISHK DUTT 4th year Undergraduate, Chemical Engineering Department

It was that time of the year when the air in the campus was thick with excitement, gender ratios seemed less skewed and festive spirits engulfed everyone. Mood Indigo was celebrated in 2009 from 21st to 24th December. The festival, in its 37th reincarnation, brought the best of performances, competitions, workshops and much more, all packed into four days of frolic and fun. With budgets soaring over Rs. 1 crore in recent years, its very humble beginnings are interesting to note. When Mood Indigo started back in 1973, it had just Rs. 5,000 as its total budget, that too contributed partly by the Gymkhana and the rest by advertisements in the Mood Indigo brochure. This year, Mood Indigo witnessed over 60,000 students from about 500 colleges across India coming down to attend the festival. The biggest crowd-puller was the concert by the popular rock band, Porcupine Tree. One could gauge the level of excitement for the band’s first performance in India from the never-ending queues, two days before the festival had even begun! This was the first time that Mood Indigo charged a fee for any of its events. The passes were available for Rs. 600 for college students and Rs. 1,000 for non-college people. IITB students could attend the concert for free. Although the event saw huge crowds and people from all over the country coming down to attend the concert, the crowd was managed successfully, with minimum glitches.

There were a lot of street events planned and the audience lapped it all up, be it football jugglery or street magic.

The other concerts saw a last-minute change of artists and thus created a lot of confusion among the audience. The most notable was the cancellation of the Vishal Shekhar concert and its replacement by Shankar, Ehsaan and Loy. Although the cancellation was last-minute, the organisers did a commendable job by replacing them with an even better and bigger name. Mood Indigo has seen various artists of great stature perform consecutively for five years, from 1980 to 1984. Hema Malini, Talat Aziz, R.D. Burman, Asha Bhosle and many other artists have been part of the festival in its yesteryears. Mood Indigo began in 1973, with a vision to “herald the start of unique cultural happenings out here in Powai”, and to give “a chance to young Indians to break new ground on the cultural scene.” Many of us know about the Duke Ellington song, ‘Mood Indigo’, from which the name of the festival was inspired, but back in 1973, the organisers also gave another justification to the name. “The colour chosen to be representative of the Mood was Indigo — a fusion of Red and Blue. Red for the warmth and passion of an artistic adventure, blue for the originality of the rational mind, giving Indigo — the symbol of creativity and intellectualism.”

MI ’09 had a considerably lesser number of events during the four days compared to the previous year, but the scheduling was done in such a wonderful fashion that no one really noticed anything. Things one could notice, however, were: empty stalls meant for the sponsors, deserted maze arenas, events being delayed to the extent of one whole day and endless queues for every event. There were a lot of street events planned and the audience lapped it all up, be it football jugglery or street magic. Winning at the competitions at Mood Indigo has always been the crowning jewel of everyone in the country’s cultural scene. In the fight for winning at competitions this year were about 2,800 students from across the country from various colleges, accommodated on the campus for the four days.

When Mood Indigo started back in 1973, it had just Rs. 5,000 as its total budget, that too contributed partly by the Gymkhana and the rest by advertisements in the MI brochure. As a part of MI, the international music festival was a refreshing compilation of performances, ranging from popular music of Meja, to the pure opera fusion by two very talented Italians, Francesca Cassio and Ugo Bonessi. Although one of the most anticipated events, street magic by Kris Korn of ‘Mondo Magic’ fame could not happen as planned, there were a lucky few who caught him on the streets, and were in complete awe of his performance. Workshops at MI saw large crowds being mesmerised during the ‘Mass Hypnotism’ workshop, and quirky things being taught such as the ‘Pen Spinning’ workshop. Another big crowd-puller was ‘Stunt Mania’, where the crowds squealed with excitement when amazing stunts were performed right before them.

Mood Indigo also organised a few events prior to the festival to create a buzz in the air for the festival. The eliminations of the legendary rock band competition, Livewire spanned three cities, selecting bands for the final showdown on the campus during Mood Indigo. A citywide scavenger hunt was also organised prior to the festival, but it wasn’t really a resounding success, with only a few teams turning up for the event.

The theme for Mood Indigo was ‘Pirates’, and to create the ambience the campus had a miniature pirate ship, pointers in the form of artifacts, a sand sculpture of a pirate ship and a wooden cage structure to pose and get photographed in. In addition to all this, students dressed up as characters of the Pirates of the Caribbean kept on challenging passersby to a duel or two.

In the end, after all the dust settles, any Mood Indigo can only dream for a comment similar to what was published back in 1976, in the student magazine, when Mood Indigo concluded that year:

“We think people who did not enjoy MI are weird and need a thorough check-up.”

Historical references have been taken from the book ‘Monastery, Sanctuary, Laboratory’ by Rohit Manchanda.
Kendriya Vidyalaya and Campus School have been a part of our landscape for almost as long as the institute has been around. Early architects of the institute had planned a school that would take care of the educational needs of the wards of the campus employees. KV IIT (Bombay) Powai opened its door to pupils from 15th June, 1964.

The function of education is to create human beings who are integrated and therefore intelligent. We may take degrees and be mechanically efficient without being intelligent. Intelligence is not mere information; it is not derived from books, nor does it consist of clever self-defensive responses and aggressive assertions. One who has not studied may be more intelligent than the learned.

We have made examinations and degrees the criterion of intelligence and have developed cunning minds that avoid vital human issues. Intelligence is the capacity to perceive the essential, the what is; and to awaken this capacity, in oneself and in others, is education. The right kind of education is not concerned with any ideology, however much it may promise a future utopia: it is not based on any system, however carefully thought out; nor is it a means of conditioning the individual in some special manner. Education in the true sense is helping the individual to be mature and free, to flower greatly in love and goodness. — J. Krishnamurti

What we call ‘education’ today is a consumer good: it is a product manufactured by an official institution called a ‘school’. The more education a person consumes, the more fruitful he makes his future and rises in the hierarchy of the capitalists of knowledge. Education establishes a new class pyramid to the extent that the major consumers of knowledge can subsequently claim more valuable services to their society. — Ivan Illich
It's a Dog's Life  ■ ANOUSHKA BANAVAR (13) Campus Kid

Short and stout, cute and cuddly, and always ready for a belly rub. Can you guess who I am? Yup, I'm Alexander 'Cookie' Banavar, Sasha for short. You may have seen me walking around campus with my family. You could call me a pure-bred IllTian since I came to this beautiful campus as an eight week old puppy and this has been my home ever since.

Oft when on my belly I lie, in a vacant or pensive mood, I think I am very lucky to have a home here. I get to have a long lazy walk both in the morning as well as in the evening, along leafy, shady paths filled with the sweet scent of fresh dew on grass, hay and cow-dung!

The most exciting moments of my walks are when I get to meet my canine compatriots. The collarless variety whom my owners refer to as 'strays' are all over the place. They believe in giving me a ten-gun salute as I pass by and I try to look as regal as I can. Sometimes, though, the mob gets a little too enthusiastic and charg-es straight at me. At these times my human bodyguards take charge.

Next, about my collared pals. Surprisingly, all the business class canine members are Labradors. I'm the youngest in the gang but am allowed to have fun with the BIG boys! We have a canine jamboree every Sunday at Kshitij where we have a rollicking time chasing each other around the park.

Apart from fellow dogs, there are many other creatures who never fail to interest me. Cows get me excited, bulls get me bothered, squirrels are fun to chase, cats are too cowardly to notice, monkeys are funny and tempera-mental, and birds are not my cup of feathers.

My favourite destinations on campus are the hill behind my home and the Powai lake. There is nothing more invigorating than a bracing hill climb with my family. I love to feel my ears flapping in the wind as I sniff around what I believe are rabbit burrows. After all I'm the King of Ananta Rock.

Every time I see the Powai Lake, my natural Labrador instincts come to the fore. I wish I could jump in and have an exhilarating swim but my family seems to be scared of the crocodiles and holds me back. However, this summer, when the waters had receded, I got to fulfil my wish. They say curiosity kills the cat — well, maybe it nearly kills the dog too! I was chasing a canine buddy of mine, when I decided to investigate the swampy part of the lake and fell right in. I shall never forget the look of horror on my master's face as I slowly sank into the bog. What ensued was actually a tug of war between the bog and my master. In the end I was yanked out, dripping mud from every pore. That is something I will not forget for a very long time.

Another favourite destination of mine is the newly opened ice-cream parlour on the hostel road. What greater joy than to feast on a cup of cold vanilla ice-cream after a long, tiring walk!

I could go on and on about my escapades but I have to go and greet Anoushka at the door. She has just returned from school and I've been waiting for this moment all morning. So, see ya folks on the road someday!
Number Game

Raintree is soon going to be a year old. You can picture the loud “phew” and the collective wiping of sweaty brows at team Raintree. The journey from a tender sapling (that it is today) to the mature leviathan (of tomorrow) cannot be accomplished without continuous and critical self-examination. Visualised as an alternative platform to voice the views of campus residents - has Raintree managed to dig its roots into the Campus Consciousness? Call us a tad self-indulgent or consider it an early birthday present to ourselves, but this issue’s ‘Number Game’ is all about Raintree: what you think about the magazine and where it should go. While we mull over the feedback, you can take a look at what our random survey has unearthed.

**Readership**

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**Raintree so far...**

The Coppersmith Barbet, Crimson-breasted Barbet or Coppersmith (Megalaima haemacephala), is a bird with crimson forehead and throat which is best known for its metronomic call that has been likened to a coppersmith striking metal with a hammer. It is a resident found in South Asia and parts of Southeast Asia. Like other barbets, they chisel out a hole inside a tree to build their nest. They are mainly fruit eating but will take insects.

*Photo* Yogesh Murarka, Dept. of Computer Science and Engineering
**Republic Day Celebrations 2010**

26th January, 2010 at the Institute Gymkhana Grounds. There was a march-past by the NCC, MCC cadets, Guards, Cubs and Bulbuls troupes of Kendiya Vidyalaya, Campus School and the Security Staff of IIT Bombay respectively. Cultural programmes were performed by students of IIT Bombay, Kendiya Vidyalaya, Campus School, NCC and Vidya. Awards and meritious certificates were handed over by the Director to deserving candidates.

**International Philosophy Day** was organised on 18th November, 2009 by the Department of Humanities and Social Sciences, IIT Bombay and the Indian Council of Philosophical Research (ICPR), New Delhi. A talk on ‘Borrowed Things: The Future in William Gibson’s Fiction’ was given by Dr. Aniket Jaware; a lecture on ‘Knowledge as Semantic Ability’ was given by Dr. Ranjan K. Panda; a lecture on ‘Exploring the conditions of Objectivity’ was given by Dr. Deepi Gangavane and a talk on ‘Repositioning Interpretative Social Science after Postmodernism: Understanding, Interpretation and Self’ was given by Dr. Koshiy Tharakan.

**National Education Day** was celebrated by IIT Bombay on 11th November, 2009 in the Institute Auditorium. This is also the birthday of Maulana Abul Kalam Azad, an eminent educationist and the first Union Education Minister of Education.

**IIT Bombay Celebrated Alumni Day 2009**

IIT Bombay hosted Alumni Day on 27th December, 2009. Alumni Day is a special day at IITB, where several hundred alumni gather in the campus to reminisce, to network, to get updated, to get rejuvenated, to reconnect, to back-thump and to show off their days at IITB to their families. This year, it was also a great day for rekindling old friendships and forging new ones. This year’s special focus was on the Silver Jubilee Reunion of the class of ’84. In addition to getting together for the reunion, each Silver Jubilee Batch also takes on a Legacy Project to leave a lasting legacy of that batch to the institute. The Legacy Project team, in conjunction with the core planning team for the reunion have chosen three initiatives for the project, with the theme of ‘Past, Present and Future‘ in mind. These initiatives are the Retired Faculty Wellness Fund, Soneri Baug and the New Faculty Sign-on Bonuses.

Commenting on the three projects, Arvind Sanger, alumnus from the class of ’84 said: “We all have gained tremendously from the quality of education that IITB imparted to us. A large part of our success can be traced back to the opportunities that our education at IIT brought to us. Through these projects, we wish to give something back to our alma mater and leave behind a remembrance of our Silver Jubilee Reunion”.

**DSA Awards on Alumni Day**

23rd December, 2009 was also an occasion to announce and present the prestigious Distinguished Service Awards (DSA) to the alumni. The awardees were chosen from among the nominations received from various stakeholders, like the alumni and faculty of IIT Bombay. The DSA, instituted in 1999, are conferred on IITB’s alumni who have contributed in a sustained manner to the institute’s progress. Presented by Prof. Devang Khakhar, the award consists of a certificate, memento and an uttanka. This year’s awardees were:

**Prof. Deepak Sheth, Deputy Director (F&A) giving away Distinguished Service Award to Mr. Bakul Desai on the Alumni Day Function**

- **Bakul Desai**, B.Tech, ChE, 1982. Mr. Bakul Desai was a key player in putting together the Young Faculty Joining Bonus scheme of the class of ’82. He is spearheading the Hostel Alumni Team Stewardship (HATS) initiative for Hostel 4.

- **Prafulla Napate**, B.Tech, ME, 1981. Mr. Prafulla Napate had a role in visualising and executing the Financial Aid Programme, the legacy project of the class of ’81. In the past three years, FAP has advanced loan scholarships to the tune of Rs. 80 lakhs, benefiting about 300 IIT Bombay students.

- **Ajay Phatak**, B.Tech, ChE, 1984. Mr. Ajay Phatak has served as the President of the Pune Chapter of IITB’s Alumni community (2007-08 and 2008-09). During these years, a major part of his work was devoted to developing and executing the Innovation event. Under IIT Bombay-Industry interaction, his company is currently working with Prof. P.C. Pandey of Electrical Engineering Department on data-driven modelling.

- **Dipak Sheth**, B.Tech, ChE, 1976. Mr. Dipak Sheth was a member of the organising committee of the Silver Jubilee Reunion (batch of 76) in December 2001. Elected to IITBAA BOD in 2005, he has held the position of Treasurer and carried out proactive management of funds at IITBAA. He also consolidated finances to bring the organisation on a healthy foundation.

- **Sanjay Jain**, B.Tech, CSE, 1987. Mr. Sanjay Jain has served the IITB Alumni community in Bangalore as a member of the Executive Committee since 2004, and is currently the President of the Bangalore Chapter. He is also currently on the Board of Directors of the IITBAA. He was the primary organiser for Kal Ajur Aur Kal, the closing ceremony of the Golden Jubilee celebrations in Bangalore.

- **Sreedhar Reddy Kona**, B.Tech, Civil, 1997. Mr. Sreedhar Kona is currently the President of the New York Chapter for IITB’s Alumni community. Earlier he was the Treasurer of the New York Chapter and a member of organising team of the Golden Jubilee (2008) Conference in New York. He is actively involved in organising various local events under the New York Chapter, and was also actively involved in PANIIT ’09.

**IITB Sees an Upswing in 2009-10 Placements**

Amid positive vibes about improved markets and increased hiring, IIT Bombay entered into its placement season with 120 companies who have visited the campus so far. Over 500 offers have been made through on-campus and pre-placement offers. More than 180 campus placements have been offered to IITB students so far. Over 500 offers have been made through on-campus and pre-placement offers. More than 180 campus placements have been offered to IITB students so far. According to this year’s placement figures, IITB has entered into its placement season with 120 companies who have visited the campus so far. Over 500 offers have been made through on-campus and pre-placement offers. More than 180 campus placements have been offered to IITB students so far.

**‘Hats’ Off to Hostel 4**

A team of 160 alumni from Hostel 4 of IIT Bombay have got together to form the ‘HATS’ or Hostel Alumni Team Stewardship — a programme aimed at paying back mess workers (both current and past), improving infrastructure facilities at H4 and increasing interaction between alumni and students. The programme was launched on 26th December, 2009 and was attended by Hostel alumni, Mr. Manohar Parrakkar, ex-CM of Goa and the current Leader of Opposition in the assembly, as well as Mr. Ajit Shelat. Both Manohar and Ajit are also Distinguished Alumni Awardees of the institute since 2001.

**HATS is not a New Concept in IITB**

The current programme aims to build on the success of the Hostel 7 campaign — ‘In Service of the Lady’, which was launched in 2006. Already, about 65 alumni have pledged more than Rs. 25
2010. The highlights of the festival are as follows.

Which a pool of white water formed a pristine canvas for
the interactive experience. Also, TOYOTA IQ was displayed for the first time in India. It is a screen grabbing natural user-interaction and ubiquitous computing to create multisensory experiences and memories. Metazoo, another display, is a multi-touch, table-top touchscreen with the interactive environment that people to interact simultaneously. Discovery Dome gave an immersive experience surrounded by warped images of black holes, constellations and galaxies.

EXHIBITIONS AT TECHFEST 2010

The Techtronix exhibition displayed robots that could fly, swim, walk, climb and perform all imaginable tasks. ‘Nature and Life’ exhibition was dedicated to the beauty and marvels of nature, and how human inventions have made life easier for the physically challenged. ‘The Future and Beyond’ exhibitions gave insight into what our future holds, from efficient solar cells to the virtual world of cyber humans. ‘Accelerators Everywhere’ was a section of exhibits dedicated to particle accelerators, with scientists from Oxford University and CERN. ‘Nuclear Reactors’ was another section after the working of nuclear reactors in India, with exhibitions of scaled-down models of heavy water nuclear reactors. A rare display of Uranium fuel bundles from the Nuclear Power Corporation of India (NPCIL) was also a part of the attractions.

ISRO exhibitions presented a unique and rare collection of the products which are a result of the R&D taking place at the organisation. The Indian Navy Exhibition displayed how the Indian Navy attacks the enemy on all surfaces: land, water and air. Display of the 25 feet missiles and torpedoes of the Indian Navy was a visual treat.

NATIONAL CENTRE FOR MATHEMATICS

20 mathematicians assembled for a workshop convened by Prof. C. S. Seshadri and M. S. Raghunathan in October 2006 at the National Institute of Advanced Studies, Bangalore. This workshop took place to discuss the development of mathematical research, education and the requirements of user agencies and industries. The workshop resulted in the outlining of a plan of action to create a major boost in Mathematics education and research in India. This report listed setting up of two institutes similar to the Mathematics Research Institute at Oberwolfach (Germany) by this proposal. A team of mathematicians from IIT Bombay and TIFR have proposed setting up a National Centre for Mathematics (NCM) in the picturesque surroundings of lakes and hills at IIT Bombay.

The NCM is planned to be a major centre for organising short term courses, workshops, national and international conferences for researchers, Mathematics and its applications throughout the year. Its programmes will give a major boost to training and to researchers in all age groups working in frontier areas of Mathematics. With increasing globalisation, several leading universities in Europe and America are sending delegations to institutes like IITs and TIFR for possible collaborations. Currently, organising various national conferences and workshops takes a great deal of effort. Organisers need to locate a suitable venue, and then spend considerable energy in matters like accommodation, local transport, food, etc. The proposed research institute on the campus of IITB will eliminate these difficulties.

Mathematicians from IITB and TIFR plan to come together to establish NCM and run its programmes. For this purpose, a multipurpose building with a 100 seat state-of-the-art auditorium, several seminar halls, a cafeteria, a library, a guest house with 50 rooms and 20 offices is envisaged.

INTERNATIONAL WORDNET CONFERENCE 2010: IIT

Bombay played host to the 5th International Conference of the Global WordNet Association (GWIC-2010) from 31st January–4th February, 2010. This event also marked the 10th Anniversary of the Global WordNet Association. The conference saw the presence of scientists, engineers and linguists interested in natural language processing from all over the world.

The growth of a worldwide community of WordNets was reflected in the conference programme, which included presentations (with data from 27 languages) on reports on Indian and Asian WordNets (each covering multiple regional languages), papers on challenges of constructing new WordNets in a wide range of languages, the theoretical foundations and structures of WordNets, as well as reports on its numerous extensions and applications. The event also featured a cultural evening that included performances by the eminent flautist, Pandit Rupak Kulkarni and Mrs. Leesa Mohanty, a well-known Odissi dancer.

DESIGNING FOR CHILDREN WITH FOCUS ON ‘PLAY + LEARN’ AT IITD

The Industrial Design Centre organised the ‘Designing for Children’ International Conference from 2nd-6th February, 2010. This international conference focused on Indian conditions, opportunities and discussions concerning design issues related to children. The event threw light on the role of designing for lakhs of which Rs. 12 lakhs has already been collected. Nine retired mess workers (and their families) who have served for more than 25 years at H4, were presented with a cheque of Rs. 25,000 with an assurance that they will be paid another Rs. 75,000 each on retirement.

“HATS is a unique initiative that leverages on the bond between hostel and alumni. It is a framework that can be extended to all hostels. IIT Bombay Alumni Association is happy and proud to be a part of it, and is sure that it will soon be a campus-wide trend that will embrace alumni in all hostels,” said Mr. Milind Gokhale, Chairman of the IIT Bombay Alumni Association.

TECHFEST 2010: Asia’s largest Science and Technology festival was held at IIT Bombay from 22nd – 24th January, 2010. The highlights of the festival are as follows.

INDEXUS AND TECHFEST 2010

Techfest stepped beyond Indian borders with its unique initiative called Indexus, making Techfest the first and only student festival to go international. Preliminary rounds of competitions were staged in different parts of the world as qualification rounds for the Techfest World Challenge, where teams from different parts of the world battled against each other to attain the supreme position. The total amount of money dedicated to prizes for contests came to more than Rs. 4 lakhs, making the Techfest World Challenge the grandest of all the events in Techfest 2010.

EVENTS AT TECHFEST 2010

Techfest held the Indian Sudoku Championship, the Indian leg of the World Sudoku Championship (WSC) which was conducted by the World Puzzle Federation. It followed the Olympic standard, and brings together puzzlers from around the world for the annual World Sudoku Championship. Top rankers will represent India in the 5th World Sudoku Challenge to be held in April 2010 in Philadelphia, USA.

Competition comprised of events related to high-end robotics; to robotic machines that battle each other to win the race; to unexplored fields of basic sciences like CF; to all coding related events; to design and architecture; to innovation and to the second season of inter-collegiate combat robotics.

Techfest introduced the Energy General Championship (Energy GC), a competition between hostels at IIT Bombay, where the hostels battled to conserve the maximum amount of energy. Through this competition, the hostel inmates devised unique ideas to conserve energy in daily life, as well as follow very basic rules of saving energy in daily life, as well as follow very basic rules of maximum amount of energy. Through this competition, the hostel inmates devised unique ideas to conserve energy in daily life, as well as follow very basic rules of saving energy in daily life, as well as follow very basic rules of maximum amount of energy.

NDRF planned some dramatic shows to exhibit their Response Force provided an elaborate exhibition of their equipment and techniques to handle various disasters. Visitors learnt not just about earthquakes and flood disasters, but also chemical, biological and radiological disasters and their countermeasures. In addition, Gen. N. C. Vij, Vice Chairman of NDMA visited IIT Bombay during Techfest on 22nd January, 2010 and took an invited lecture.

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LECTURE SERIES AT TECHFEST 2010

Techfest strives to bring the best in science and technology to students and acquaint them with research and development being carried out over the world. Lecture Series this year saw the presence of Dr. Lyn Evans, the Project Head of Large Hadron Collider at CERN, Switzerland, and Dr. Lars Rasmussen, the co-founder of Google Wave and Google Map as its major lecturers.

The father of Wi-Fi, Victor Hayes, was also a distinguished lecturer at Techfest 2010. Vic Hayes, from the Dell University of Technology spoke on the development of Wi-Fi, its spread and the heights it can reach, with the current research. The presence of Mr. Gerhard Kinne, the chairman of the DERTEC Foundation’s supervisory board was also rewarding.

The DERTEC foundation of Austria organises among others clean power from deserts into service of energy, water and climate security for a world now populated with 10 billion people. Dr. Daniel Thalmann, Director of the Virtual Reality Lab, EPL, France mesmerised the audience by giving a talk and demonstrating his research on virtual humans, thereby, “Unleashing the Future” in its true sense. Techfest 2010 also had Dr. R. Chidambaram, the Principal Scientific Adviser to the Government of India on campus. He spoke on Nuclear energy security and Climate Change.

INNOVATIONS IN MATH EDUCATION

As a part of its ongoing efforts towards continuous innovation in Math education, the Department of Mathematics, IIT Bombay organised TIME 2009, the 3rd National Workshops, Ganit Utsav and Google Map as its major lecturers. The father of Wi-Fi, Victor Hayes, was also a distinguished lecturer at Techfest 2010. Vic Hayes, from the Dell University of Technology spoke on the development of Wi-Fi, its spread and the heights it can reach, with the current research. The presence of Mr. Gerhard Kinne, the chairman of the DERTEC Foundation’s supervisory board was also rewarding. The DERTEC foundation of Austria organises among others clean power from deserts into service of energy, water and climate security for a world now populated with 10 billion people. Dr. Daniel Thalmann, Director of the Virtual Reality Lab, EPL, France mesmerised the audience by giving a talk and demonstrating his research on virtual humans, thereby, “Unleashing the Future” in its true sense. Techfest 2010 also had Dr. R. Chidambaram, the Principal Scientific Adviser to the Government of India on campus. He spoke on Nuclear energy security and Climate Change.
children as related to the design of objects, media and environment, with a focus on 'play and learn'.

The conference centred around the interests of students, educators, practicing designers and children-related interest groups and was designed to be lively, interactive and thought-provoking. It provided a great opportunity to interact with thought leaders, listen to visions by researchers and for networking.

2nd INTERNATIONAL CONFERENCE ON ADVANCES IN ENERGY RESEARCH was organised by the Department of Energy Science and Engineering from 9th-11th December, 2009. It addressed the challenges of global energy, such as depleting fossil fuels and climate change. It also addressed the need to talk of the current status of R&D in energy, and provided brainstorming sessions to set guidelines for the future. The conference provided an excellent platform to know, interact, exchange new ideas, discuss new developments and look critically at the challenges to make a better future.

THE 7TH EDITION OF PROTO.IN Proto.in is India's premier start-up event that showcases the best of Indian innovation. Previous Proto.in events have been held in Chennai, Bangalore, Delhi and Pune. The event took place on January 30th, 2010 at F.C. Kohli Auditorium, IIT Bombay. The keynote speakers included Pradeep Gupta, the Founder and Chairman of Cybermedia and Sanjeev Bhikchandani, the Founder and MD of Naukri.com. Other elements of the event included presentations and mentoring sessions with angel investors and venture capitalists. The event ended with a networking dinner at MIG Club, Kalanagar, Bandra (E). SINE (www.sineitb.org) was the principal sponsor and showcased its companies, also inviting a select list of guests for the event, including IITB faculty members, IITB alumni and other eminent business leaders. Attendees included entrepreneurs, angel investors, venture capitalists, corporate executives and the media. Other sponsors included Bharti Airtel, Sequoia Capital, SBI Venture, Indian Angel Network and the Society for Innovation & Entrepreneurship. In the past, keynote speakers at Proto.in have included Kiran Kamik, Ganesh Natarajan and Bob Young, among others.

NCC ANNUAL TRAINING CAMP was conducted by the two Maharashtra Engineer Regiments of NCC, from 1st – 10th December, 2009 for the cadets of IIT Bombay, Campus School and AEC’s School, Tarapur. 136 Senior Division cadets and 72 Junior Division cadets attended the camp. The aim of the camp was to inculcate qualities of good character, leadership, discipline, spirit, courage, confidence, the spirit of adventure and a secular outlook, all of which are the hallmarks of a good and useful citizen. To achieve this aim, institutional training was conducted which included classes on national integration, leadership, disaster management, social service, weapon training, drills, physical training and field engineering. The activities terminated with the validation of the training imparted. Prizes were awarded to the best cadets in Drills, Firing, Obstacle Course, cal training and field engineering. The activities terminated with the validation of the training imparted. Prizes were awarded to the best cadets in Drills, Firing, Obstacle Course, cultural performance and overall best cadets.

CELL FOR HUMAN VALUES organised a musical concert lecture by Pandit Nayan Ghosh, Distinguished Guest Professor, on 13th January, 2010 at Dhrupad Sansar. Pandit Nayan Ghosh is a leading sitar and tabla artist of the country, and will be spending a year at the Cell for Human Values, IIT Bombay.

State Minister for Education, Ethiopia visits IITB Hon. Dr. Adhana Haile, State Minister for Education, Ethiopia met Prof. Subhash Chaudhuri, Dean (IR), IIT Bombay to establish a strong relationship with the institute, specially by twinning IITB with Ethiopian universities in the area of research, staff exchange, co-curricular and the like. The meeting was also attended by Prof. Masresha Fetene, Vice President for Research and Dean (Graduate Studies), Addis Ababa University, Ethiopia, and Ms. Jayos Joshi, Public Relations Officer, IIT Bombay.

Prof Khakhar to be a part of re-constituted SAC

The director of IIT Bombay, Prof. Devang Khakhar has been selected as a member in the re-constituted Scientific Advisory Council (SAC) to the Prime Minister in January 2010. The SAC advises the eminent chemical scientist, Dr. C.N.R. Rao. 32 members are a part of the council now, as opposed to 28 members earlier.

This is a great honour for Prof. Khakhar as well as the institute, because the members, who will advise the Prime Minister on all issues relating to science and technology development in the country, have been chosen to cover a wide range of fields and different sectors, including government research centres, academic institutions and the industry.

SEMINARS

Department of Biosciences and Bioengineering held a seminar on ‘Structure Biology of Proteins and their Complexes’, by Dr. Nagendra Singh, Department of Biophysics, All India Institute of Medical Sciences, New Delhi. This was organised on 26th November, 2009.

Department of Biosciences and Bioengineering organised a seminar on ‘The Genetic Landscape of a Cell: Mapping Genetic Interactions using Yeast Functional Genomics’, by Prof. Brenda Andrews, who is a professor and the Chairwoman of Banting and Best Department of Medical Research and Director, Terrence Donnelly Centre for Cellular and Biomolecular Research, University of Toronto. There was also a talk on ‘Quantitative Cell Array Screening to identify regulators of Gene Expression’ by Dr. Pinay Kamth, University of Toronto.

Department of Biosciences and Bioengineering held a seminar on ‘An investigation into the Molecular basis of Hybrid Incompatibility’, by Ms. Arundhati ‘Shamoni’ Maheshwari, an alumnus of Cornell University, USA. She did her M.Sc. (Biotechnology) in 2004 from the Department of Molecular Biology and Genetics at Cornell University. This seminar was organised on 15th January, 2010.

Department of Computer Science and Engineering organised a talk titled ‘Heavy tails and models for the Web and Social Networks’, given by Dr. Prabhakar Raghavan, SVP and Head of Yahoo Labs. It was held on the 6th of January, 2010.

Department of Humanities and Social Sciences organised a seminar on ‘Memory and the Metropolis’, by Kaivan Mehta, KRV Institute for Architecture, Mumbai. It was organised on 11th November, 2009.

Department of Humanities and Social Sciences organised a seminar on ‘The Bhils in the State Formation of Mewar: Resistance and Assimilation (7th-19th centuries A.D.)’ by Dr. Mandini Sinha Kapur, Director, School of Interdisciplinary and Transdisciplinary Studies, India Gandhi National Open University, New Delhi. The seminar was organised on 17th December, 2009.

Department of Humanities and Social Sciences organised a seminar on ‘Neuro-imaging Studies of Reading and Language Development: An Update on Recent Findings’, by Dr. Kenneth R. Pugh, Director, Research at Haskins Laboratories (Yale), and Associate Professor, Department of Pediatrics (Neurology), the Yale School of Medicine. The seminar on ‘Creation without Theodicy: Post-Metaphysical Views’ was held by Dr. Michael Fagenblat, Lecturer, Jewish Thought at the Australian Centre for Jewish Civilisation, Monash University. This seminar was organised on 23rd November, 2009.

Department of Humanities and Social Sciences organised a seminar on ‘Preserving Digital Memories: A Patrimonial Approach’, by Prof. Bruno Bachmair, Université de Technologie de Compiègne, France, on 8th December, 2009.

Department of Humanities and Social Sciences organised a seminar on ‘Relevance of Earthquake Themes in Buddhist Literature across Asia’, by Dr. Eugene Curtin, Institute for the History of Religions, Romanian Academy, Bucharest and Publications Officer, European Association for the Study of Religions. This seminar was organised on 6th January, 2010.

Department of Chemical Engineering organised a seminar on ‘Deterministic Models of Corrosion Processes in stainless Steel’, by Dr. Harish Chandra, University of Texas at Austin. The seminar was held on 17th January, 2010 at the Institute Distinguished Lecture (in the memory of Professor C. V. Seshadri).
Department of Metallurgical Engineering and Materials Science organised a seminar on "Cutting Edge Topics of Future of EPR", by Prof. Sushil K. Misra, Department of Physics, Concordia University, Montreal, Canada on 18th December, 2009.

Department of Metallurgical Engineering and Materials Science organised a seminar on "Production of Clean Steels", by Dr. T. Venugopal, CTO, Tata Steel, Jamshedpur on 15th January, 2010.

Centre for Research in Nanotechnology and Science (CRNTS) organised a talk on "FTIR Imaging System and its Applications", by Dr. Mustafa Kansiz, Application Scientist from Varian Inc, UK on 16th December, 2009.

NEWS FROM KENDRIYA VIDYALAYA

Five members of the IIT Bombay Swimming Club won laurels in the under-14 category of the 40th Kendriya Vidyalaya Sangathan National Sports Meet 2009, organised by the KVS (Delhi Region), from 16th-20th November, 2009. They are Ms Apurva Phale, who won one silver medal (200 metres individual medley) and three bronze medals (100 metres breaststroke, 4x50 metres medley relay and 4x50 metres freestyle relay); Ms Saakshi Kale, who won one silver medal (100 metres backstroke); two bronze medals (4x50 metres medley relay and 4x50 metres freestyle relay); Ms Namashya Sahoo, who won two bronze medals (4x50 metres medley relay and 4x50 metres freestyle relay); Siddhant Reddy, who won two silver medals (200 metres individual medley and 100 metres breaststroke); Siddharth Rao Deb, who won three silver medals (200 metres breaststroke, 100 metres breaststroke and 4x50 metres medley relay).

This award was presented on 18th November, 2009 at the India International Centre, New Delhi. This award is instituted by the All India National Unity Conference, New Delhi, and is given to selected people from various fields for their outstanding services, achievements and contributions to promote national unity, integration, brotherhood and oneness.

Professor Emeritus Prof. S. M. Khopkar, Department of Chemistry has been bestowed the Life Time Achievement Award by the Indian Council of Chemists (ICC) at its 28th conference, held in North Gujarat University, Patan.

Dr. K Prashanti, Research Scientist in the Department of Electrical Engineering has been selected for the prestigious Young Achiever Award for the year 2009, which is sponsored by BINS, Department of Atomic Energy, Government of India. The award ceremony was held on 18th December, 2009 during the 54th DAE Solid State Physics Symposium at the University of Baroda.

Professor A. Khanna, Corrosion Science and Engineering Department has been conferred the first Akzo Nobel Award for Excellence in Coating Research and Promotion for his "outstanding contribution of research in water borne coatings and promoting Coating research in India".

The award was sponsored by Akzo Nobel, a leading international paint company in China and India. It was conferred to Prof. Khanna on 28th January, during the 7th International Symposium on Surface Protective Coatings, 28th-30th January, 2010.

Dr. Santosh Gupta, Chem. Engg.  
Dr. H. Narayanan, Elec. Engg.  
Dr. J.M. Vao, Elec. Engg.  
Prof. U.A. Athavale, IIC  
Prof. A.G. Rao, IIC  
Dr. A.W. Date, Mech. Engg.  
Dr. Shiva Prasad, Physics  
Dr. G. Mukhopadhyay, Physics  
Dr. N.K. Naik, Emer. Fellow, Aero.  
Dr. Y.D. Sharma, Mathematics  
Dr. Ravi S. Kulkarni, Dist.VS.Prof.  
Dr. D.M. Dhamdhere, CSE  
Dr. S.L. Dhingra, Emer. Fellow, Civil  
Dr. Tanur Kant, Civil Engg.  

Mr. Jay Parikh, Student, Department of Electrical Engineering has been selected for the Honda Young Engineer and Scientist (YES) award by Honda Motors.

Mr. Antarkish Bothale, Student, Department of Electrical Engineering has been selected for the Honda Young Engineer and Scientist (YES) award by Honda Motors.

K. Krishna Mohan, Research Scholar, Reliability Engineering has been selected for IEEE Reliability Society Award for the year 2009.

Kedar Tatwadi, first year B.Tech. (Electrical Engineering - DD) student has won a Gold Medal at the International Olympiad on Astronomy and Astro Physics (International Science Olympiad) held at Tehran, Iran. It was held from 17th-26th October, 2009. Kedar is one of the five students who represented India at the Olympiad. This time, the International Olympiad had 21 countries with 100 students participating and India has stood first with two gold medals, two silver medals and one bronze medal. Previously, Kedar had won gold medals at the Astronomy Olympiads held in Mumbai in 2006 and Simeiz, Republic of Crimea, Ukraine, in 2007.

Senior faculty members who have achieved a requisite level of excellence in their fields of teaching and research were recognized and aided by being appointed as Chair Professors by IIT Bombay. Appointments to the chairs are made by a committee headed by the Director of IIT Bombay, field experts, Institute functionaries and a nominee of the donor as an observer. Selection is based on peer reviews of overall research achievements, and achievements, in particular, of the previous three years.

The term of a Chair Professorship is usually 3 years for full time faculty of the institute or for full time faculty employed on contract.

The following have been appointed to Chairs shown against their names in 2010:

1. Dr. Santosh Gupta, Chem. Engg.  
2. Dr. H. Narayanan, Elec. Engg.  
4. Prof. U.A. Athavale, IIC  
5. Prof. A.G. Rao, IIC  
7. Dr. A.W. Date, Mech. Engg.  
8. Dr. Shiva Prasad, Physics  
9. Dr. G. Mukhopadhyay, Physics  
10. Dr. N.K. Naik, Emer. Fellow, Aero.  
11. Dr. Y.D. Sharma, Mathematics  
12. Dr. Ravi S. Kulkarni, Dist.VS.Prof.  
13. Dr. D.M. Dhamdhere, CSE  
14. Dr. S.L. Dhingra, Emer. Fellow, Civil  
15. Dr. Tanur Kant, Civil Engg.  
16. Mr. Jay Parikh, Student, Department of Electrical Engineering  
17. Mr. Antarkish Bothale, Student, Department of Electrical Engineering  
18. Mr. Anasuya Mandal, Student, Department of Electrical Engineering  
19. Mr. K. Krishna Mohan, Research Scholar, Reliability Engineering  
20. Mr. Kedar Tatwadi, Student, B.Tech. (Electrical Engineering- DD)
APPOINTMENTS

PROF. M. K. SRINIVASAN, Department of Mathematics was appointed as Head, Department of Mathematics on 1st December, 2009.

PROF. C. R. VISWANATHAN, has joined as Distinguished Visiting Professor in the Department of Electrical Engineering on 26th October, 2009.

PROF. RAVINDER PURI has joined as Distinguished Guest Professor (Adjunct) in the Department of Physics on 3rd November, 2009.

MS. SWATI PAL BISWAS has joined as Post Doctoral Fellow in the Industrial Design Centre on 16th November, 2009.

DR. (MS.) LEENA VACHHANI has joined as Assistant Professor in the Systems and Industrial Management on 2nd December, 2009.

DR. KIRANKUMAR MOMAYA has joined as Professor in the S. J. Mehta School of Management on 10th December, 2009.

DR. SUDESH BALAN has joined as Assistant Professor in the Industrial Design Centre on 1-4th December, 2009.

DR. GOPALAN RAJARAMAN has joined as Assistant Professor in the Department of Chemistry on 29th December, 2009.

DR. ASHWIN A. TULAPURKAR has joined as Associate Professor in the Department of Mechanical Engineering on 31st December, 2009.

DR. JAYDEEP V. CHIPALKATTI has joined as Visiting Associate Professor in the Department of Mathematics on 1st January, 2010.

DR. VIRENDRA M. PURI has joined Distinguished Visiting Professor in the Department of Mechanical Engineering on 4th January, 2010.

DR. ROBERT N. GOLDBERG has joined as Visiting Professor in the Department of Chemistry on 4th January, 2010.

DR. KAUSHIK ROY has joined as Distinguished Visiting Professor in the Department of Electrical Engineering on 7th January, 2010.

PROF. K. S. VALDIYA has joined as Distinguished Guest Professor in the Department of Earth Sciences on 7th January, 2010.

RETIREMENTS

SHRI ASHOK D. GANORKAR will be retiring after 36 years of service on 31st December, 2009. He worked in the institute as Jr. Technical Superintendent in the CRNTS.

“I know him since 1982, when I joined, and I’ve not seen anyone else with such a nice nature and character. He was extremely cooperative with his colleagues as well as the students. He liked keeping the work atmosphere light. I remember he cracked good jokes. He was hard working too. On most Sundays you’d find him working with the students. He helped them out a lot.”
—Mr. Rajagopal, Lab Attendant, CRNTS.

SHRI AFZAL ABDURRAUF HURZUK retired after 39 years of service on 31st December, 2009. He worked in the institute as Sr. Draftman in the Department of Civil Engineering.

“He was a very simple-hearted and spiritual human being. His nature was that of a good listener and co-worker. When he was in charge of the department library, he used to help the students a lot.”
—Mr. Rajagopal, Lab Attendant, CRNTS.

SHRI SUBHASH GOVIND BHAVE retired after 40 years of service on 31st December, 2009. He worked in the institute as Mechanical Assistant (Gr.I) in the Department of Aerospace Engineering.

“The thing that stuck me about him, when we met the first time was that he was a very nice human being. He was compatible with students, colleagues and the faculty. He specialised in fabrication of composite laminates.”
—Prof. N. K. Naik, Department of Aerospace Engineering.

SHRI GOVIND B. KUWAR retired after 33 years of service on 31st December, 2009. He worked in the institute as Watchman (SG) in the Security Section.

“He was a sincere and cooperative person. A good security guard, who took his job seriously and performed it earnestly.”
—Mr. Vijay Kumar, Security Officer.

MS. K. A. SHAKUNTHALA retired after 23 years of service on 6th January, 2010. She worked in the institute as Library Information Officer in the Central Library.

“Ms. Shakanthala served this library for 22 years. She is an extremely spiritual person. She was well-known for helping and counselling people, specially students and colleagues. As far as library services were concerned, she used to go out of her way to help readers and book lovers.”
—Mr. Murshill, Library Information Officer.

SHRI VISHWANATH S. KAKADE retired after 33 years of service on 31st January, 2009. He worked in the institute as Watchman (SG) in the Security Section.

“He was a very social man. A part of many activities outside work, he used to keep himself busy with helping people. Also, he was a person who sincerely undertook the duties assigned to him.”
—Mr. Vijay Kumar, Security Officer.

SHRI NAVRANG B. CHAVAN retired after 35 years of service on 31st January, 2010. He worked in the institute as Cleaner (SG) in the Public Health Office.

“I can say many things about him, but foremost what comes to my mind is that by heart he was a good man. By nature, was kind. He was prompt and helped out anyone who requested his services without any hassles. He was also very egalitarian in his treatment of colleagues.”
—Mr. Tambe, Sanitary Assistant, PHO.

SHRI PRakash S. CHIPKAR will retire after 38 years of service on 28th February, 2010. He worked in the institute as Sr. Technical Superintendent in the Department of Metallurgical Engineering and Materials Science.

“I joined in 1980 so I’ve seen him work here for 30 years. He does much more on the job than is required of him, and is therefore very dependable. I find him sincere, hardworking and upbeat despite having gone through two bypass surgeries. These setbacks did not change his positive attitude. A gem of a person, who helps students with any difficulty in the lab. A thorough gentleman whose presence we will miss after February.”
—Prof. A.N. Tiwari, Department of Metallurgical Engineering and Materials Science.

SHRI RAJENDRA S. NEGI will retire after 32 years of service on 28th February, 2010. He worked in the institute as Sr. Superintendent in the Hostel Co-ordination Unit.

“He was a very dedicated and hardworking person. I’ve always seen him cheerful and no matter what problems we offered him, he handled them without even saying no. I, personally, have learnt a lot about HCU from him.”
—Prof. Ananya Datta, Department of Chemistry.

MS. K. C. REKHA will retire after 28 years of service on 28th February, 2010. She worked in the institute as Jr. Superintendent in the Central Library.

“She brought fresh charm in the library with her polite nature and softspoken manner. She worked sincerely and hard, assisting students in finding their way to the books they needed. She was cooperative with her colleagues and we will miss her very much.”
—Mr. Bhendigiri, Assistant Librarian.

SHRI SANDHU U. KHARAT will retire after 35 years of service on 28th February, 2010. He worked in the institute as Helper (SG) in the Central Stores.

“We will remember him as a kind person who was constantly cooperative and trustworthy. He has never refused to take on any task that we’ve offered him, and he has proved his immense worth by working hard. We will miss him.”
—Mr. Bhorkade, Acting Deputy Registrar, Material Management.

MS. CHANDRABHAGA SATU GAJKWAD will retire after 20 years of service on 28th February, 2010. She worked in the institute as Cleaner in the Public Health Office.

“Her work ethic was very strong. She always informed her superiors when she took even a little time off for her personal errands. Also, she was a very quiet worker. No one ever had complaints about how she worked.”
—Mr. Tambe, Sanitary Assistant, PHO.
Just the other day I was walking amongst the tanks and temples that adorn the bustling town of Kumbhakonam.

Early in the morning we filled our bellies with pongal and vada and washed it down with steaming coffee served in small metal glasses and tumblers.

The descendants of the sthapathis of Kumbhakonam who created these temples, continue to live and work here.

Umastapathi’s brother, showed us - students from a modern school, how wax is shaped into those elegant nataraja bronzes.

In another room at the back of the sthapathi’s house is an unbelievably small furnace in which coppers and bronzes are melted.

Watching all of this, a question takes shape in my mind. Is the nature of this knowledge, handed down through generations, different from the knowledge that is imparted in modern universities?

Closer home, near the IIT Main Gate, this riddle of the old and the new comes alive, even as the Maruti temple stands a mute spectator to the onslaught of the Marutis of the era we are in.
**PHOTO-ESSAY**

From DANGER SCHOOL!

**CUT OFF FROM LIFE**

Danger School! is perhaps the world's most subversive cartoon book on education. A landmark book, first printed in the early 1970s by the Institute for Cultural Action (IDAC) based in Geneva, it is part of a series of dossiers published by IDAC on education. Paulo Freire, its founder, was a Brazilian educator and reformer. The illustrations are drawn by Brazil's ace political cartoonist, Claudius Cecon.

His scathing illustrations, coupled with an evocative and crisp text graphically document the authoritarian, artificial world of school. The analysis is based on examples taken from the Western-European context, but the issues raised are relevant for all educational systems including ours, which is also influenced by the Western-European model. It was reprinted in 1984 by Arvind Gupta, an electrical engineer from IIT Kanpur. Arvind was a science educator for children and a toymaker extraordinaire. Since then, it has been translated into Hindi, Marathi and Telugu.

Not just for teachers and pedagogues alone, it is a must-read for every parent and student. All though we cannot reproduce the entire book, we have scattered some illustrations and excerpts from the book across this issue. These illustrations and excerpts replace the Photo essay in this issue. For a look at the whole book, you can visit http://www.arvindguptatoys.com.

It is an excellent resource for parents looking for science education activities and toys, as well as for people interested in issues dealing with education and the environment.

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Send in your articles, photographs, etchings, poetry, or anything else you would want portrayed in the magazine to pro@iitb.ac.in.