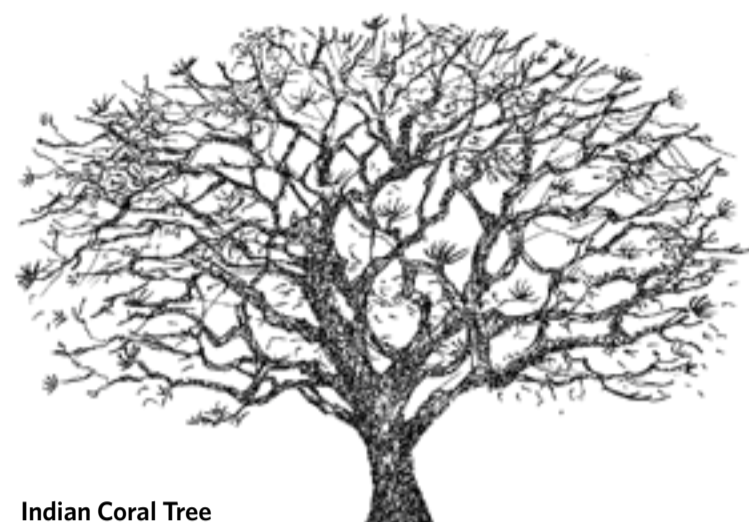




Illustration by Chinmayee Samant, IDC



Indian Coral Tree

The coral, *pangara* 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* trifoliolate 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.

PERSPECTIVES

'Looking in' and 'Looking out' of the Classroom

 ■ DAMAYANTI BHATTACHARYA

LOCAL EXPERIMENTS IN ALTERNATIVE EDUCATION

Every child has a gleam in her eye when she first goes to school. By nature, children are inventive and full of curiosity. They want to explore, understand and make sense of the world they live in. Do schools and our education system hamper or hone this ability? This issue of *Raintree* delves into the world of school education, to share with you the views, opinions and ideas of the IIT Bombay fraternity. Now, you may be wondering about the relation our institute has with school education. Why should *Raintree* devote an entire issue to this theme?

Most of you would agree that the broad concept of education and different methods of imparting education is a practical subject that IIT Bombay has to deal with on a day-to-day basis, with every successive lecture, lab and quiz. IITB is but a larger, more concentrated site for education and knowledge workers. The students who arrive at our doorsteps are the products of our school system, and as parents, teachers and knowledge workers, the subject of Indian schools should be of interest to all of us.

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)

Inside

Perspectives - Beyond the Classroom 2
 Perspectives - Reconfiguring the Classroom 5
 Perspectives - From the Classroom 9
 Perspectives - Beyond our Boundaries 10

Profile - Portrait of Ms. M... 11
 Review -Theatrical Feats 12
 Review - Mood Indigo 2009 14
 Random Meanderings 16

The Number Game 17
 News and Events 18
 Appointments and Retirements 22
 Photo Essay 24

'Looking in' and 'Looking out' of the Classroom

(continued from page 1)

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. Our colonial past further consolidated this trend. Rote learning was encouraged and the curriculum, unrelated as it was to the realities of the Indian context, represented a major discontinuity for our children.

Attempts at indigenising education did begin fairly early, be it Tagore's *Shantiniketan* or Gandhiji's treatise in Basic Education (*Buniyadi Talim*). Yet, the ghost of Macaulay¹ continues to dominate the education system of a post-colonial, modern India. Colonial pedagogy has outlasted colonial rule; curricula continue to be textbook-bound; pedagogy passive and teacher-centred. While the system of education has expanded enormously since our independence, it has not been able to shed colonial prescriptions of textbooks and examinations.

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 have opted to foray into the world of building alternative educational models/schools for children, and have chosen to teach them in their own way, sometimes opting to teach at home, without the help of mainstream schools.

Their ideas on education are in line with a new thinking in alternative education. The basic premise of this approach is that since our natural or social world is not divided

into artificial compartments, neither should the world of knowledge and education. For this issue, since it is difficult to describe an 'integrated' approach to learning in abstract terms, we have attempted to capture its essence through illustrative and sometimes narrative examples.

The structure and layout is also a practice in inversion, so we begin with *Beyond the classroom* to look at parents who have wholly eschewed the school as a model for imparting education. Jogesh Motwani's (alumnus, IITB) opinion piece, 'Reneging on parenting, reneging on the earth', is a blistering denunciation of the current educational model. He also includes a proposal that visualises the greater involvement of parents and a more intimate connection with nature, to ensure that a child remains free and integrated with life. V. Sunder (also alumnus, IITB) and his wife Sonati have a more organic and 'return to basics' approach to teaching, and what speaks volumes about their world is the entry from their sons Varun and Badri.

This is followed by *Reconfiguring the classroom*, which begins with an opinion piece titled 'Education Park: It is not only a School', in which Prof. Chetan Singh Solanki (Department of Energy Science and Engineering) proposes an alternative educational model for rural India, which is a work in progress at Bhikangaon in Khargone district of Madhya Pradesh. Neha Chaudhuri's 'Navnirmitti—How to Make a Difference', also looks at improving our access, and shares with us the work done by the Navnirmitti Trust in universalising elementary education in Math and Science, by using low cost/no cost methods for learning materials. Not all our entries eschew schools as a model of imparting education.

In 'Tridha — Head, Hand, Heart', Patrick Brilliant, one of the original founding members of Tridha introduces us to a special alternative school. Tridha is fashioned on the educational philosophies of the famous educator and pedagogue, Rudolf Steiner. What speaks volumes about this school is the accounts of Tridha students, Rudra and Bhriugu Ranade (campus kids), as it becomes immediately obvious that these are children who enjoy and look forward to going to school. We close this section with an essay from a 20-year old campus youth, Bhavini Pant who shares with us her private dream, her very own special school that she would like to start someday.

Since this issue is about education, children should have their fair share of telling us what they think of it. **From the classroom** expresses the opinions of children who are in

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

school. Niharika Karandikar's 'Boarding up the Boards' and Sneha Khedkar's 'Our Current Education System: Good or Bad' both talk about the pressures of examinations, but from diametrically opposite viewpoints.

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 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 Chaize (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

■ DR. JOGESH MOTWANI Alumnus, B.Tech 1986, Ph.D 1997

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

Among 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
Some similarities:

- they control the victim's time and environment
- they control the inmate's movements, thoughts and associations

- they create fear and dependency
- they suppress old customs and traditions
- they instill new beliefs
- they allow no criticism
- the control is exercised by strangers whose personal lives remain secret
- the mechanism of control is reward and punishment — obedience and conformity are rewarded, individuality and creativity are punished

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 variable; 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
- prisons are largely egalitarian (almost everyone is abused equally); schools create 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, these adults are found wanting in what should be the most instinctive of human functions — parenting. 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?)

Parenting in the modern age has been reduced to a secondary support function — the school sets the agenda and the parents provide unconditional, uncritical support. This leads to parental guilt, rage, and helplessness, and unbearable expectation, pressure, and frustration among children. The long term effects are low self-esteem, feelings of inadequacy, and increasingly often, suicide. So, what's the alternative, you ask? What's the alternative to smoking, I reply.

"Reforms", you say — the magic word! Muck around with teaching methodologies, fiddle with curricula, meddle with assessment styles and potter around with schedules (in the scientific age, all expert-driven change is, by definition, progress). Yet, all studies from within the system indicate that none of this is working — which shouldn't come as any surprise, since all we are essentially doing is maintaining the status quo.

Unfortunately, the consequences of these actions are too horrific to even consider. For if we are to continue along on this trajectory (if 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 paeans 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 alternatives will be a respect for all life-forms, a respect for labour and provisions for leisure and creativity — in short — a philosophical and religious framework for rejuvenation and revival.

Alternative Living

There are already signs of this happening. Around the world over, sensitive individuals are opting for lifestyles that are more holistic, nature-based and ethical. In many instances, this requires moving away from mega-cities and forming smaller communities that strive for self-sufficiency in the essentials of water, food, and culture. 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.

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, dry land and wet land cultivation techniques, which develops 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.

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**

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.

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.

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. ■

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 house-work, 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 of them children, and our strategy has been to send them outdoors as far as possible. Outdoors, there is less scope for "I want that" or "he has taken mine", since there are plenty of items — sticks, stones and mud — to share around.

One upshot of this method was that their daily play with each other gave rise to theatrical plays which were actually staged at the Nesting Grounds amphitheatre (a large outcrop of rock). It was remarkable to see how well 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

"... 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."

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 socialistic 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.

On the technique we have absolutely no worries about whatever the boys have needed to learn, they have learnt it effortlessly and for the sake of learning — not for fear of punishment or in the hope of an external reward. Be it reading, writing, drawing, painting, photography, filming or cycling, they have learnt it in their own time and by themselves.

Since we cannot provide them with opportunities for doing everything, we hope to network with others with similar concerns to provide children with spaces where they can learn whatever is on offer in an entirely supportive environment.

Our paramount concern is not the technique itself to be learnt, but rather the means to that end. ■

One day in the life of Badri and Varun

BADRI (12) AND VARUN (8)



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 got 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 'magic 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 'magic row') and the other pile is given to you to remove the card from. When you turn the pile picture-side up, the magician looks at the 'magic 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, but the prices went up, so we didn't need them. Actually, they went up because there weren't any ½ \$\$\$ notes! Another thing we had in the \$\$\$ game was a Museum called 'Gusev 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...

RECONFIGURING THE CLASSROOM

Education Park: It is not only a School

■ PROF. CHETAN SOLANKI Department of Energy Science and Engg

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 economies 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 that is required today. It is technically impossible to have one primary school in every Indian village, and expect quality education because schools don't have teachers.

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

Many schools either exist or are currently being built under SSA in nearly all rural areas, separated only by a 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.



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 insufficient 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

Education parks will provide high quality education through trained teachers. It will focus on hands-on learning. Students will spend about 25% of their school time outside the classroom to learn by experiments and experience.

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. Teachers will be trained regularly to keep them up-to-date with current knowledge.

Education parks will put significant effort into providing training to the community, in and around the locality where it is set up. The objective of the training will be to increase economic activities in the region. Training in language, computers, agriculture, solar energy, etc. will be provided. The parks will promote the use of solar energy in several ways.

First of all, the whole campus will be running fully on solar energy from day one of its operation. The infrastructural design of an education park is based on sustainable living — which includes green building designs in order to minimise energy requirements, water harvesting and waste material recycling.



The first education park is being set up at Bhikangaon in Khargone district, which will cater to the education and training needs of villages within a 20 km radius. It is envisaged that there should be one education park for every 50 to 100 villages. The first education park is being set up from donations so that the cost of services can be minimised to an affordable range. Our government can set up similar institutions with quality and affordability as its objectives. It is easier to set up one excellent institute in, let's say, every 25 villages than setting up one institute in every village.

In summary, an education park is just not a school but much more: it is a model for the comprehensive growth of rural areas. ■

RECONFIGURING THE CLASSROOM

Navnirmity – How to make a Difference

■ NEHA CHAUDHURI Campus Resident

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 Navnirmity pop up.

Navnirmity (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

Navnirmity 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, Navnirmity 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 fail 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. Navnirmity has developed a wide variety of thingols to teach all aspects of primary school mathematics. Navnirmity 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.

When problems are faced while implementing the [UAM] method in reality, they are identified, confronted and discussed thread-bare as they are an important part of the whole learning process.

UNIVERSAL ACTIVE MATHEMATICS METHOD (UAM METHOD)

This method uses the universal things-language of mathematics. It employs reality-based content and activity-based methods. It connects real life math with its things-language representation and alphanumeric expression.

The UAM method is tried and tested in all types of schools — rural, tribal, local government schools in urban areas and even the elite schools in Mumbai. In all these schools, the teacher-student ratio is from 1: 60 to 1: 40.

UAM CULTURE

Every math period is conducted in groups of five, in a Mathlab or in the classroom. Children learn with cooperative learning, understanding and self-confidence. The attempt is to inculcate a liking (and even a love) for mathematics in the participants (both students and teachers). For this, the pace and general culture that prevails in a classroom is a very important part of the system. This must be understood by all the participants, especially adult ones.

This approach is not a ready-made product. It has to be worked out in practice. The programme itself is based on a 'do and discover' approach. When problems are faced while implementing this method in reality, they are identified, confronted and discussed thread-bare as they are an important part of the whole learning process.

The teachers must get rid of the 'wrong answer', 'right answer' approach. Through orientation and workshops, they learn to recognise that the mistakes children make in tackling problems are as important as the 'right answers', as a clue to the learning process.

Many similar initiatives have been taken for teaching science. For more information, go to <http://www.navnirmity.org>. ■

Source All information has been obtained from Navnirmity website <http://www.navnirmity.org>.

RECONFIGURING THE CLASSROOM

Tridha – Head, Hand, Heart

■ PATRICK BRILLANT one of the Founding Members of Tridha Rudolf Steiner

Walk into Tridha at its current premises, and you will see the engineering feats little hands can be capable of.

Immediately inside the compound is a guardhouse, simple but serviceable. A bit beyond it is a tree house — an all-time favourite place to play, jump, gossip or just retreat from the world for a bit. Rock-solid and immutable even after seven years of children streaming up and down its ladder, jumping around it and holding secret conferences of their ultra-secret clubs inside, these were the first ever structures made by the children of class III.

Yes, you got that right, nine-year olds built these with their own hands, during their House-building block. This 'block',

or period of study encompasses both - the theoretical and practical aspects of simple building, where children use their newly-acquired knowledge of measurements (taught earlier in the year) to draw and discuss plans, organise materials and build — with their own hands — a real structure that is relevant, useful and appealing to them.

Last year, class VI took a trip to Goa as part of their Geology studies, visiting mines, picking up laterite and going gaga over rocks at Goa University's rock collection. Other children mixed mud and cow-dung in the required proportions to make a mud brick wall for the school's sand pit. 'Astronomy' is not just another word in the syllabus at Tridha; rather, it is an occasion to go to a remote

corner of the Rann of Kutch, to be able to study the night sky, equipped with a telescope, star charts and resident astronomy resource persons.

Steiner emphasised the importance of achieving balance in the three different ways a person relates to the world — through thinking (the head), life of emotions (the heart) and physical activity (the hands).



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.

Without tests or formal exams, without even a single textbook until class seven, discoveries are made, hypotheses are questioned, proofs are checked out and the child's mind is awakened to the laws that govern our physical world.

From nursery upward, little fingers are kept busy working with real materials on real projects, the utility of which they can see around them; young minds are kept questioning at each step and with each result; and their hearts resound with the joy of discovery.

This is the three-way method of learning at Tridha, where academic, artistic and practical activities co-exist. This method is based on the philosophy of Rudolf Steiner, and is followed by over 900 Steiner schools (or Waldorf schools) worldwide. Steiner emphasised the importance of achieving balance in the three different ways that a person relates to the world – through the realm of thinking (the head), the life of emotions (the heart) and physical activity (the hands).



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 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.

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 'investigation'. It not only involves the students' minds, but also encourages questioning and self-discovery. The connection to the world around them is never severed.

Around the age of 12 with the onset of puberty, the child's powers of thinking develop and his intellectual and conceptualising abilities begin to dominate his thinking. Subjects that appeal to their power of judgment are now introduced and they are well-received by the child, more easily grasped and understood. This becomes the perfect time to introduce geology, physics and chemistry. 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

RUDRADUTT RANADE (12) AND BHRIGUDEV 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, Kapil, 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.

BHRIGU'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 *na*? 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 *Dandaka* forest because we are learning the story of *Ramayan*. The boathouse painting was the best I did in class three.

RECONFIGURING THE CLASSROOM

My Champagne Supernova

■ BHAVINI PANT Campus Youth

There's one thing that comes naturally to every living human on this earth. No matter where you come from, what you look like, how much money you have (or don't have), what your past, present or future may be, there is one thing that is very unique to you, and yet shared by every human being. You dream.

My dream is of a school. I want to create a place where anyone can come and learn what they feel like. It's not so much a 'school' in the sense of having a building with an assembly ground in front and a playing ground behind. It's more like a vast learning space where you can devote yourself to learning and pursuing something that you love. When I say 'anyone' I do have a special emphasis on children, but I don't intend to introduce any hierarchies, either among adults or within children themselves.

Talking of hierarchies, my school doesn't naturally elevate the teacher over the student. I believe that teachers learn as much from students; any facilitating of learning can't simply be unidirectional. My school also doesn't slot children into classes, and equate successful learning with having passed from one class to the next one. A class is an environment, an atmosphere to learn something in. You can't pass or fail in an environment, you 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 herself better 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 them 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 — why are you doing engineering if you crib 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 largely 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 anger, how to stand up and be honest, how to forgive each other and themselves, all simply because what they learn is closely intertwined with



Illustration by Farweej Bhutia, IDC

Human relationships form the crux of our lives. It is surprising to see how largely 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.

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 them 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 a very 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 mammoth 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 their 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.

1. Robinson, Sir Ken. TED. http://blog.ted.com/2009/08/ted_and_reddit_1.php

FROM THE CLASSROOM

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 evaluation is flawed, doing away with the Boards entirely is just not the solution. Over the years, Board exams have been an important part of a student’s life. It is believed that these 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.



Danger School! IDAC document

It is true that Board exams cause sleepless nights and stress, but abolishing Board exams only on the basis of stress is not correct. Children should face the competitive world and also learn values that will help them in the future. Teenagers also will have to face the big bad world some day or the other, and if this is not the time you teach them to handle stress and pressure, then when is it? This becomes particularly significant in the Indian scenario, as these very students will have to deal with everything from pressure, stress, shock, unfairness, frustration to even racism at some point of time in the near future.

Board exams are just the stepping stones to the process of career building. An elaborate, extensive and well-executed strategy regarding studies can help you crack the Board exams without any pressure whatsoever. Our newspapers often tell us stories about students committing suicides due to exam pressure. But I would simply like to say that those who cannot face the pressures of an exam will not be able to face the seemingly insurmountable challenges that life will throw at them as they grow up. The predicament regarding such cases is often more personalised than generalised. Thus, the system can’t be blamed for a handful of cases.

The solution to the problem of today’s students is to do away with the bottleneck that occurs at path of quality higher education. Instead of modifying the evaluation pattern, why not try to build a compatible structure in terms of sheer numbers, so that higher education is accessible

[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.

at slightly lower grades? Why not open more colleges? Why not increase the intake capacity? Why should we not improve the quality of education imparted at most colleges? 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.

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. ■

FROM THE CLASSROOM

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.

I have often seen my classmates becoming tense due to fear of getting scolded at home, more than due to their exam results.



Danger School! IDAC document

This often results in children becoming depressed. As we all know, many children have taken to committing suicide because of such depression.

There are many of us who may not be good in studies but are good at other things, like sports. They are not encouraged to pursue these activities as they are taught that they won’t earn a livelihood through them and so they have to concentrate on their studies. (contd. overleaf)

FROM THE CLASSROOM

Our Education System: Good Or Bad? *(continued from page 9)*

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.

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.



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. ■

Danger School! IDAC document

If I Become a Teacher

MUGDHA 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.

BEYOND OUR BOUNDARIES

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.

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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.

(Learning foreign languages, especially English is also an aspect highlighted in the new education.)

Students with learning problems, too find in these schools, specific solutions suited to their personality and bolstering their desire for self sufficiency and independence. However, after having completed their primary "alternative" education, many of these children will be facing the brutal reality of high school, college and the corporate world, far removed from the cocoon of alternative schools. does not fit everyone, but imposes a shared value system that one must learn to accept without hesitation. ■

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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. Dounia 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 journalistic report of the day. Then a group makes a salt dough and the other group plays educational games.

PROFILE

Portrait of Ms. M...

MS. MANJULI SHARMA English teacher at Kendriya Vidyalaya, IIT Bombay, Powai

Photo: Jas Chawla 1st year. Ph.D Mech. Engg

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, corporeally present yet mentally wandering in daydream land. School was fun 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 younger 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 younger 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.

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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 unalloyed 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 short stories written by its promising graduates. 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 Sune*, directed by Naseeruddin Shah and Nadira Zaheer Babbar 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 *Chui-Mui*, *Mughal Baccha* and *Gharwali*. 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. *Chui Mui* told us the story of a pregnant Bhabhi Jan from the eyes of a young girl. The contrasts between the pampered, rich Bhabhi Jan, and the poor rural woman who gave birth to her child on a train hit me in the face.

Mughal Bachcha was about male dominance in our families and the sufferings of the women folk as a consequence of this. Finally, the story of *Gharwali* — 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 field until their fame spread all over India. While Gulab danced for the masses, at the other end of the spectrum was Beni Bai, who catered to the elite with the more refined *baithak* style. Even though they propounded a

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

similar art form, their lifestyles and audiences differed from each other. In the play, both women, now old reflect on the glory of their past life. In the course of their reminiscing, a mutual respect develops between them. And though they don't actually know each other, the play helps them exist in a surreal space where they sit and talk about their experiences. Yes, it does capture your attention, with the *kathak* and the music blended with dialogue creating an all-in-one spellbinding package which is reminiscent of a Bollywood pot-boiler.

Afsaneh is also a story of two women who paved their own path and dared to challenge the status quo. Despite the serious theme, the play wasn't devoid of humour. With Beni 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 IITB alumnus 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. *Nali 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



Ananth Mahadevan and Nadira Zaheer Babbar in *Dastaan Goi – Hum Kahein, Aap Sunien*



Manoj Pahwa in *Ismat Aapa ke Naam-2*, directed by Naseeruddin Shah

From the nuanced and practised ease of the professional plays to the youthful exuberance of the plays by the students, the audience relished the plays till its last dregs.

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-goi*, – the art of reciting dastans. Dastans are traditional romantic epics that are related to the 1001 Arabian Nights, Panchatantra 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 dregs. I only hope that the tradition of bringing theatre to our institute continues and keeps reinventing itself, year after year. ■

REVIEW

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-suitcase 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 Whiz 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. Whoever you are from the MI team who decided to bring this group, may I say — well done. It was a fine choice.

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They weave songs like vivid dreams or stories told in films, mostly dark. In the words of a critic, "each songs tells a story, occasionally true, often false, but always intense". Their music influences have come from unlikely places. Take this for example: the band has performed on the Dublin Docks, in prisons and mental institutions, on French national television, in a ruined castle in Tuscany, on a transatlantic ship, on a night train, in the streets of Paris and in many concert halls and clubs. Rosemary used to perform on the streets along with her father. Thomas and Arthur in 2001 went to western Africa in search of roots of blues music. During the nine-month long trip, the two lived with the natives and recorded their music. Later they travelled to Mississippi and found guitar players who taught them the forgotten blues music. The song *Whiteman's Ballad* has melodic strains and visuals of their travel.

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," I 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 shoving 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, we have adopted each other and have been together for too long. Long enough for us to be complete strangers at times. We don't always have moments like these. "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 scintillate crowds on the campus. The likes of Zakir Hussain performed 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.

HISTORY

Mark me Present

■ **KANISHK DUTT** 4th year Undergraduate, Chemical Engineering Department

KENDRIYA VIDYALAYA AND CAMPUS SCHOOL UNPLUGGED

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.

From its humble beginnings as a nursery and K.G. school housed in two rooms (which today are the Principal's Chamber and School Office), the school has come a long way. Ten principals and thousands of students have passed through its gates and today it is one of the premiere schools of the Kendriya Vidyalaya Sangathan.

Campus School came into being as a primary school on 29th June, 1976 for employees of IIT Bombay, Sameer and NITIE. Classes five to ten were added by 1986 and Classes 11 (FYJC) and 12 (SYJC) for the Science stream were started by the late 80s. Presented below in brief are some interesting snippets about the history of the two schools.

KENDRIYA VIDYALA

- Started as a KG section in 1963, school established in 1964
- Had a staff strength of 25 and about 300 students when it started
- Initially the school was run in two shifts because of lack of space, primary in the morning and secondary in the afternoon
- The school was the first amongst all KVs in India and second among all schools in India to get NABET accreditation by the quality council of India
- Presently it is a three-storied building with four separate wings for primary, secondary and senior sections
- It is affiliated to CBSE, New Delhi and follows its curriculum
- Some of its alumni have become professors at IIT Bombay, for instance, Prof. Milind Rane in Mechanical Engineering Department, a part of the school's 1978 batch.
- Other prominent alumni include the current Minister for Environment and Forests, Shri Jairam Ramesh.
- Current student strength is about 2,000 students
- Students regularly participate at regional and national level sports meets in various sports



Illustration by Farwej Bhutia, IDC

CAMPUS SCHOOL

- Started off only as a KG section till class I in 1976.
- Was initially run in small rooms near the present NASA office and shifted to its current location in 1978.
- Founded to provide the residents of the campus with an option of a vernacular language school
- Currently the school also has a Junior College along with it (Science)
- It teaches the SSC curricula in the school
- Only the wards of employees of IIT, NITIE or Sameer are allowed for admission in the school
- Five teachers awarded the Excellence in Teaching award during the Golden Jubilee celebrations of IIT Bombay
- Many alumni of the school are working at staff positions at IIT Bombay
- The school has had about five to six students qualify for the JEE in recent times and has seen students get in prestigious universities abroad for their post-grad
- Students of the school recently represented their state in Boxing and won the Bronze Medal



Illustration by Farwej Bhutia, IDC

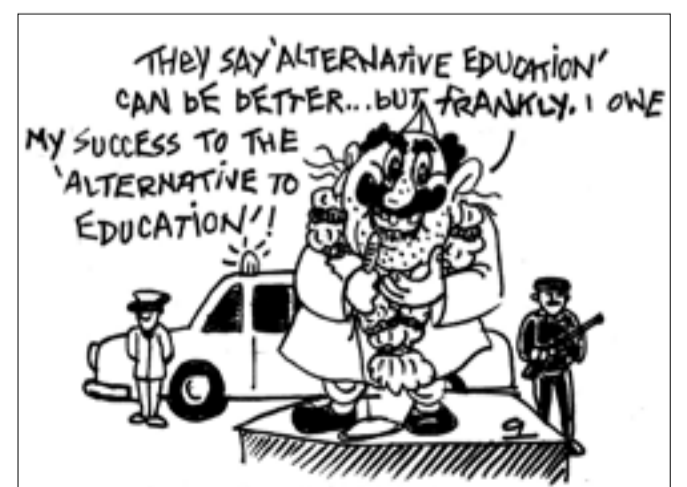
QUOTE-UNQUOTE

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. Krishnamurty

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

SALT 'N' PEPPER ■ DR. ARUN INAMDAR



RANDOM MEANDERING

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 IITian 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 charges 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

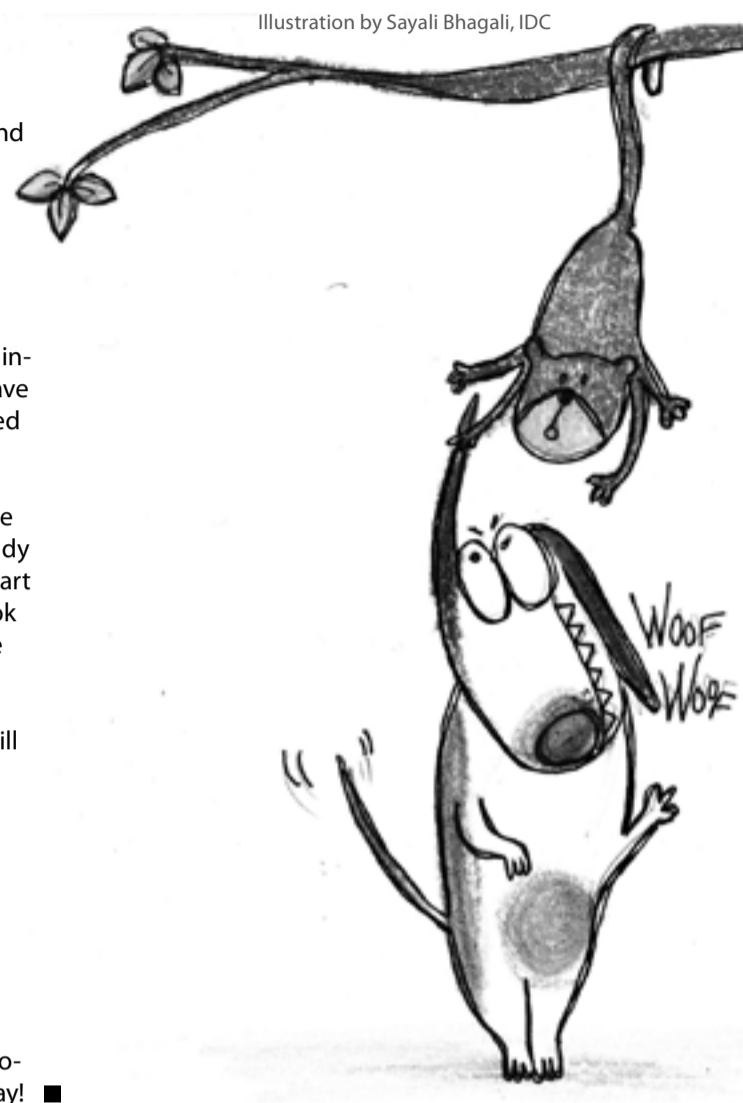
cowardly to notice, monkeys are funny and temperamental, and birds are not my cup of feathers.

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! ■



READER'S CONTRIBUTION

The Tribute ■ TEJAS BODAS M.Tech, Electrical Engineering

Let's assume that I can read minds, even those of inanimate beings. I was sitting on a bench, reading on Communication Complexity. I gave a little glance around and I knew she had come. Everyone around me felt her grace, her aura. Sparks flew underneath. Men jostled for a glimpse. I was extremely happy to see her. We were meeting after a really long time. She always knew she had her greatest admirer in me. As she came closer, my deep breaths grew less shallow. She stopped. I stood up. Some men moved behind me. Blink of an eye and solace. I surrendered myself to her.

Mutual admiration and high regard, the cosmic connection and trust, all were intact. Pop-up blockers in my mind got auto-disabled. Memories flashed everywhere and even oozed out of my eyes. How many times have you felt so elated, that you go numb? This was one such occasion.

"What's up?" I asked.

"Same old story. Doing the running around business!" she replied.
 "What's up with you? Where have you been for such long?"
 "Cooking up myself with Wifi radiations at IIT." This answer changes all the time. Being funny is a new-found obsession.

She was looking stunning. "You are quite a beauty now. The change is fabulous."

Satisfaction enlightened her face as though I was the only one to notice.

"Thank you very much. I am my favourite 'Kareena style'". I could not resist laughing.

"Happy with what time has thrown at you till now?" I had no answer. I could only thank time for an event-less journey.

"How are the Gujjus and Marwadis and the Bhaiyas and the Ghatias?" I asked her.

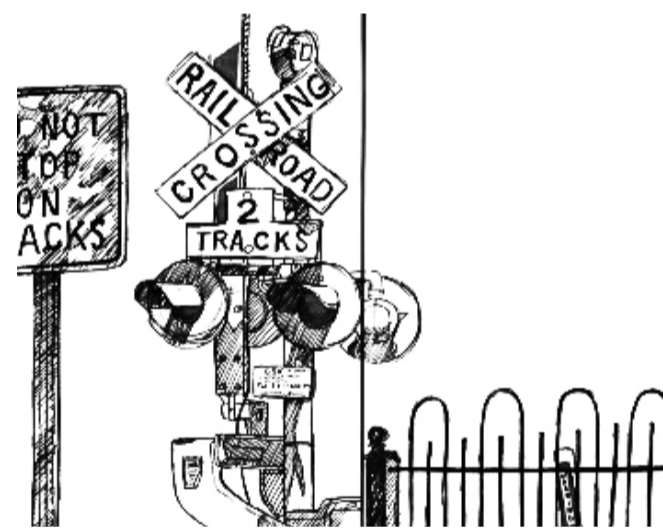
"The Gujjus and Marwadis are a bit subdued. You could leave the other two with problems of their own making," she said.

"Do you still complain a lot?" I had touched her weak spot. She was agitated with my questioning of her old habits. But she kept her cool. I had to apologise.

"On your way home?" she asked. I said yes. "So this is really a short meet," she said. I nodded.

Silence crept in for some time.

"Recovered fully from the trauma?" I asked her. It was her time to nod. She was a victim of the Mumbai train blasts. It was a black day in her life. She was ruptured a multiple number of times. She was down but not out. Limping and crawling, she had fought back. Kudos to her spirit. This is what had floored me the most. The wounds had healed, but the scars could still be felt. We went silent again. Memories of the harrowing times began flashing out of the pupil, onto the cornea. Time was up, for me. But I knew I would be back soon. I would be back at some really bad time, when I would be really bored, lonely and directionless. And there she would always be, ready with her arms open. I left with my breaths shallower than ever. The silence had prevented more conversation. But even in the silence, I felt a subconscious conversation transpiring.



I have tried to pour life into something as inanimate as the Mumbai local train. Travelling with her during Junior College days was fun. It was an experience, one of its kind. You learn a lot here. You learn from beggars, sweepers, drug addicts and occasionally from the elite class. The working class, rubbing shoulders with the bosses of equity firms. It's possible here. And to experience all this, you need nothing but a ticket. A ticket to Neverland. Once surrendered, I love observing things around me, enjoying the rubbish and analysing human behaviour. Mediating fights, solving enigmas and dozing off to oblivion are my second choices. Every Mumbaikar has a special place in his heart for the Mumbai local. It's rightly called the lifeline of the city. People surrender themselves to her and she never lets them down. We owe her so much. I really wish she could speak out. She has seen us humans, up, close and personal. If we could ask her for ways to improve ourselves, wouldn't it act as much-needed feedback?

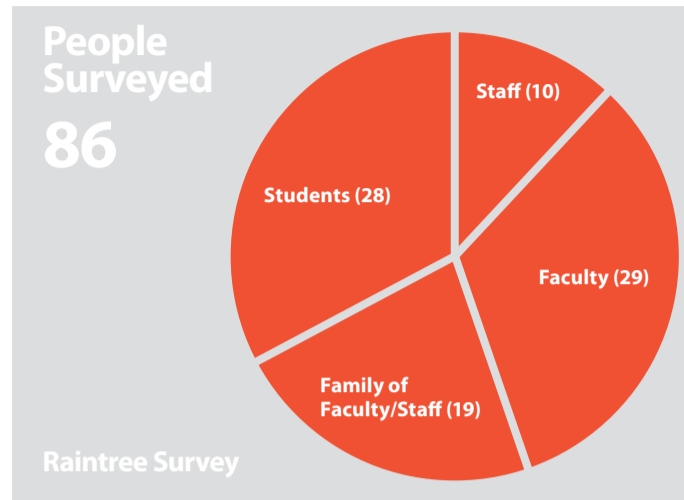
If only the first assumption were to be true, this is how my association with the Mumbai local would have been. And now, if in the middle of the day you hear strange voices: welcome to the world of the inanimate. ■

THE NUMBER GAME

Number Game

■ KANISHK DUTT 4th year Undergraduate, Chemical Engg. and ANTARIKSH BOTHALE 3rd Year Undergraduate, Mechanical Engg.

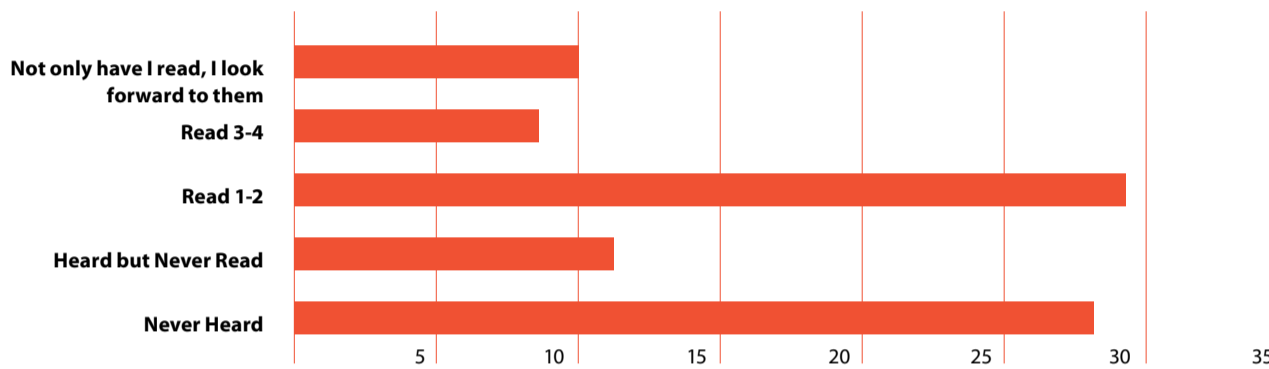
Raintree is soon going to be a year old. You can picture the loud "phee" and the collective wiping of sweaty brows at team Raintree. The journey from a tender sapling (that it is today) to the mature leviathan (of tomorrow) cannot be accomplished without continuous and critical self-examination. Visualised 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.



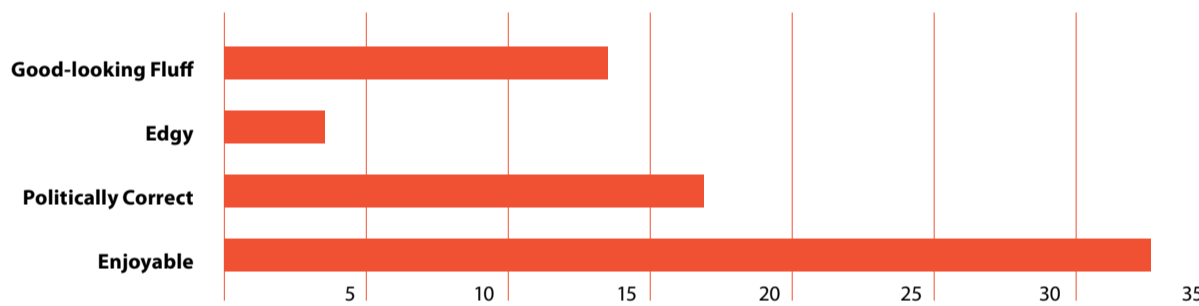
Raintree so far...



Readership



Raintree is



IN THE WILDERNESS



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

NEWS

REPUBLIC DAY CELEBRATIONS 2010 were held on 26th January, 2010 at the Institute Gymkhana Grounds. There was a march-past by the NCC, MCC cadets, Guides, Cubs and Bulbuls troupes of Kendriya Vidyalaya, Campus School and the Security Staff of IIT Bombay respectively. Cultural programmes were performed by students of IIT Bombay, Kendriya Vidyalaya, Campus School, NCC and Vidya. Awards and meritorious 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. Deepti Gangavane and a talk on 'Repositioning Interpretative Social Science after Postmodernism: Understanding, Interpretation and Self' was given by Dr. Koshy 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**.



Director Prof. D. V. Khakhar receiving the Cheque from the batch of 1984 Alumni of IIT Bombay

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 IITB created for 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

27th 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 *uttaria*. This year's awardees were:



Prof. Shevgoankar, Deputy Director (FEA) 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.

Praween Napate, B.Tech, ME, 1981.

Mr. Praween 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 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 Aaj 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 companies have confirmed their presence in the process, with more in the pipeline. Students have shown an inclination towards the technical sector, with more students opting for core engineering and technology firms. Many students have shown a growing preference for organisations like Cisco, Sony, Daimler and Eaton, amongst others. This shift is primarily attributed to the more attractive work profiles and packages offered to IITB graduates by these companies.

This year, eight leading management consultants visited IITB for campus recruitment. These included the top five

firms in the world – McKinsey, Boston Consulting Group, Bain & Co., Booz & Company and the Monitor Group. While the placement season has seen recruiters from the entire spectrum of the industry, some sectors like financial services and FMCG have come up strongly as compared to others. Such firms included McKinsey, Sony Japan, IBM, Intel, Deutsche Bank, Goldman Sachs and P&G, all of whom are world leaders in their respective domains.

The finance sector has returned to its hiring plans and been one of the major recruiters. These organisations, including Tower Research Capital, Morgan Stanley, J. P. Morgan, Credit Suisse and Nomura have recruited IITB graduates in large numbers. As many as 60 offers have been made by the financial services sector to IITB students.

YAHOO! INAUGURATED HADOOP CLUSTER LAB AT IITB

Yahoo! India Research & Development entered into an agreement with IIT Bombay, to provide access to a cluster of servers running Yahoo!'s Open Source Hadoop software and Web data, as part of an initiative to support the faculty and students of IITB in their research. Hadoop is a Java software framework that supports data-intensive distributed applications under a free license. It enables high scalability and helps in massive parallel data intensive computations.



Prof. D. V. Khakhar, Director, IIT Bombay and Dr. Prabhakar Raghavan, SVP and Head Yahoo! Labs Inaugurating the Yahoo! - IITB Cluster Lab

The partnership will support IITB researchers study areas such as advanced searching and ranking techniques aimed at bridging the gap between unstructured, semi-structured and structured data, information extraction and natural language processing. As a result of this agreement, IITB researchers will have access to a cloud computing environment, allowing them to carry out research on Web-scale data. The cluster provided by Yahoo! has been set up at IITB and is already operational.

'HATS' OFF TO HOSTEL 4

A team of 160 alumni from Hostel 4 of IIT Bombay have got together to initiate 'H4 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 Parrikar, 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

lakhs of which Rs. 12 lakhs has already been collected. Nine retired mess workers (and their families) who have served for 25 years or more at H4, were presented with cheques of Rs. 1 lakh each. In addition, another ten mess workers who have served for more than 25 years and are still in service 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 to evolve 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.



IITB Hostel 4 Alumni Honours their Mess Workers

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.

INEXUS AND TECHFEST 2010

Techfest stepped beyond Indian borders with its unique initiative called **iNexus**, 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 follows 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.

Competitions 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 CFD; 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 switching off all the electrical appliances when they left their rooms. The competition started in the month of September and ended in November.

In the night segment, Techfest held the exhibition of a ten metre tall Eiffel Tower lit by solar energy, and a Graffiti Research Lab featuring a laser stencil, which allowed students to paint a wall using interactive laser graffiti. Also, it displayed FlickrGettr, a three-dimensional interactive webpage, with easy access to its contents. Light Ripples created light and sound using digital environment, in

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 enabling natural user-interaction and ubiquitous computing to create multisensory experiences and memories. Mezatop, another display, is a multi-touch, table-top touchscreen with the unique capability of allowing multiple 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 Sciences' exhibits were dedicated to the beauty and marvels of nature, and how human inventions have made life easier for the physically challenged. The 'Future and Beyond' exhibits 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 about 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.

INDIA'S DISASTER MANAGEMENT CAPABILITIES

@ TECHFEST 2010

From 22nd -24th January, the National Disaster Management Authority (NDMA), in association with the National Disaster 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.

The NDRF planned some dramatic shows to exhibit their skills and techniques. These included the Heli-rescue show on 22nd January, Collapsed Structure Search and Rescue Show followed by the Dog Search and Rescue Show on 23rd January and the High-Rise Building Rescue Show on 24th January.

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, Vic Hayes, was also a distinguished lecturer at Techfest 2010. Vic Hayes, from the Delft 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 Knies, the chairman of the DESERTEC Foundation's supervisory board was also rewarding. The DESERTEC concept (www.desertec.org) aims at bringing 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, EPFL, Switzerland 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 Maths education the Department of Mathematics, IIT Bombay organised TIME 2009, the 3rd National Work-

shop and Conference on 'Technology and Innovations in Math Education' held from 4th - 7th December 2009.

The conference sought to serve the dual role of creating a forum in which Mathematics educators and teachers could come together to discuss and probe major issues associated with the integration of technology in the teaching and learning of Mathematics. In addition to this, it attempted to create a space where they could share their perspectives, personal experiences and innovative teaching practices. The talks by invited experts, discussions on nurturing gifted students, the Sample Math Lab, hands-on Workshops, *Ganit Utsav* and many more activities took place in three packed days.

NATIONAL CENTRE FOR MATHEMATICS

60 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). Inspired 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 in 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 (GWC-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 IDC

The Industrial Design Centre organised the 'Designing for Children' International Conference from 2nd-6th February, 2010. This international event hosted deliberations and discussions concerning design issues related to children. The event threw light on the role of designing for

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, educationists, 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 15 of the most innovative Indian product start-ups of the season. This is the first time that the event was held in Mumbai. 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, SIBDI Ventures, Indian Angel Network and the Society for Innovation & Entrepreneurship. In the past, keynote speakers at Proto.in have included Kiran Karnik, 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 AECS 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, 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 Dhruvad 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. Subhasis 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, consultancy 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 Jaya 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 council is headed by 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 14th December, 2009 on 'The Genetic Landscape of a Cell: Mapping Genetic Interactions using Yeast Functional Genomics', by Prof. Brenda Andrew, 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 Kainth, 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 alumna 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 Kaiwan 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. Nandini Sinha Kapur, Director, School of Interdisciplinary and Transdisciplinary Studies, Indira Gandhi National Open University, New Delhi. The seminar was organised on the 15th of November, 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. Another 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 Bachimont, 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 Ciurtin,

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 the Institute Distinguished Lecture in Chemical Engineering (in the memory of Prof. C. V. Seshadri) on 21st January, 2010 by Prof. K. Kesava Rao, Chemical Engineering Department, IISc Bangalore. The lecture was titled 'Excess fluoride in drinking water: Health effects, Estimation and Removal'.



Prof. D. V. Khakhar presenting memento to Prof. K. Kesava Rao at the Institute Distinguished Lecture (in the memory of Professor C. V. Seshadri)



Prof. K. Kesava Rao at the Institute Distinguished Lecture (in the memory of Professor C. V. Seshadri)

Department of Energy Science and Engineering organised a seminar on 'Economic and Emissions benefits of Efficiency options in India', by Dr. Jayant Sathaye, LBNL, USA on 10th November, 2009.

Department of Energy Science and Engineering organised a seminar on 'Performance, Emissions and Cost modelling of coal-to-liquids plants and their effect on Resources and Environment', by Dr. M. Hari Chandan, CMU, Pittsburgh, USA. This seminar was organised on 4th January, 2010.

Department of Energy Science and Engineering organised a seminar on 'Application Potential of Solar Energy for Campuses', by Mr. Srinivas, CEO of Kotak Urja. This seminar was organised on 27th January, 2010.

Department of Metallurgical Engineering and Materials Science organised a seminar on 'Chemistry of Nanoclusters: Building-Blocks for Advanced Functional Materials', by Dr. Nirmalya Kumar Chaki, Department of Chemistry, the Pennsylvania State University on 10th December, 2009.

Department of Metallurgical Engineering and Materials Science organised a seminar on 'Determining Susceptibility of Alloy 22 to Crevice Corrosion through Physio-Chemical Process Models', by Dr. Pavan Kumar Shukla, Southwest Research Institute, San Antonio, Texas on 17th December, 2009.

Department of Metallurgical Engineering and Materials Science organised a seminar on 'Cutting Edge Topics and Future of EPR', by Prof. Sushul 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. Venugopalan, 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 breast stroke, 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 backstroke); Siddharth Rao Deb, who won three silver medals (200 metres breast stroke, 100 metres breast stroke and 4x50 metres medley relay).

LAURELS

PROF. D CHANDRASEKHARAM, (Former Senior Associate, Abdus Salam International Centre for Theoretical Physics, Trieste; Chairman M/S GeoSyndicate Power Ltd.), Department of Earth Sciences, conducted an International School in Geothermics at the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy from 26th October-7th November, 2009.

He was also invited as a Visiting Professor to the China University of GeoSciences, Beijing to deliver lectures on 'Arsenic pollution in Groundwater' from 26th November, 2009 to 15th December 2009. During this period, he also visited the China University of GeoSciences, Wuhan to discuss the progress of the joint collaborative project on arsenic in groundwater in the inner Magnolia Basin, China.

PROF. KRITHI RAMAMRITHAM, Department of Computer Science and Engineering has been elected as a Fellow of the Indian Academy of Sciences, Bangalore.

PROF. T.K. BISWALI, Professor and Head of Earth Sciences Department has been awarded the National Mineral Award for Basic Geosciences, 2008 by the Ministry of Mines, Government of India.

PROF. S KOTHA, Department of Chemistry has been elected as a Fellow of the Indian Academy of Sciences, Bangalore.

PROF. PUSHPAK BHATTACHARYYA, Department of Computer Science and Engineering has been conferred the Manthan Award 2009, the South Asia award for best practices in ICT for Development of Information Technology, Ministry of Communication and Information Technology, at a function held in Delhi on 19th December, 2009.

Ms. SUNITA KEDIA, Research Scholar, Department of Physics has written a paper titled 'Photoluminescence of ZnO inverse photonic crystal'. This paper has fetched the Best Poster award at the International Conference on Advanced Nanomaterials and Nanotechnology (ICANN 2009), held at Guwahati during 9th-11th December, 2009. The paper was co-authored by Prof. R.Vijaya.

PROF. SRINIVAS ALURU, Department of Computer Science

and Engineering has been elevated to the IEEE Fellow grade with effect from 1st January, 2010. His citation states his "contributions to computational biology".

PROF. DEEPANKAR CHOUDHURY, Department of Civil Engineering has been selected for ISTE's Maharashtra State National Award 2009 for his outstanding research work in engineering and technology.

The award has been instituted by the Government of Maharashtra and was presented during the inaugural function of the 39th Annual Convention of ISTE at NITK Surathkal, on 18th December, 2009. He has also received the Indira Gandhi Priyadarshini Award 2009 for his outstanding services, achievements and contributions in the field of academics.

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.

PROF. TARUN KANT, Department of Civil Engineering has been selected for the IIT Roorkee Khosla National Award for Lifetime Achievement in the field of engineering. Prof. Kant was invited to receive the award at the annual convocation of the institute on 14th November, 2009.

PROF. RAJAKISHORE NATH, Department of Humanities and Social Sciences has received the Best Conference Paper award for his paper titled 'Supervenience and Emergentism: A Study in the Philosophy of the Mind', at the International Journal of Arts and Sciences Conference, held in Gotthenheim, Germany in November 2009.

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 BRNS, 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.

PROF. A. S KHANNA, Corrosion Science and Engineering Department has been conferred the first Akzo Nobel Award for Excellence in Coating Research and Promotion for his "excellent contribution of research in waterborne 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.

S. S. PATHAK and SHAILESH DHOKE, Ph.D students in the Corrosion Science and Engineering Department were conferred the first Kansai Nerolac Award for Best Ph. D thesis. The award has been sponsored by Akzo Nobel, a leading international paint company in China and India. It was conferred on 28th January, 2010 during the 7th International Symposium on Surface Protective Coatings, 28th-30th January, 2010.

SWATI GAUR (M.Tech Student) and RUCHI GROVER (Project Staff) won the Best Poster Paper Award for developing underwater coatings. The award has been sponsored by Akzo Nobel, a leading international paint company in China and India. It was conferred on 28th January, 2010 during the 7th International Symposium on Surface Protective Coatings, 28th-30th January, 2010.

SANTHOSH KUMAR GOWDHAMAN, second year M.Tech student, Department of Electrical Engineering won the third prize in Nebula '09. This is an all-India level analog design contest. Around 850 students from all over India

participated in this contest. The contest had two rounds, and 18 students were selected for the finals which were held at the company office, Cosmic Circuits Pvt. Ltd., Bangalore, on 26th December, 2009.

MR. JAY PARIKH, Student, Department of Electrical Engineering has been selected for the Honda Young Engineer and Scientist (YES) award by Honda Motors.

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

Mr. ANASUYA MANDAL, 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.

CHAIR PROFESSORS 2010

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. | L & T Chair Professor |
| 2. Dr. H. Narayanan, Elec. Engg. | Kamal N. Bajaj Chair |
| 3. Dr. J.M. Vasi, Elec. Engg. | P.K. Kelkar Chair |
| 4. Prof. U.A. Athavankar, IDC | Ramkrishna Bajaj Chair |
| 5. Prof. A.G. Rao, IDC | D.L. Shah Chair |
| 6. Dr. S.K. Maiti, Mech. Engg. | G.K. Devarajulu Chair |
| 7. Dr. A.W. Date, Mech. Engg. | Rahul Bajaj Chair |
| 8. Dr. Shiva Prasad, Physics | Institute Chair |
| 9. Dr. G. Mukhopadhyay, Physics | Institute Chair |
| 10. Dr. N.K. Naik, Emer. Fellow, Aero. | Institute Chair |
| 11. Dr. V.D. Sharma, Mathematics | Institute Chair |
| 12. Dr. Ravi S. Kulkarni, Dist.Vis.Prof. | Maths Institute Chair |
| 13. Dr. D.M. Dhamdhare, CSE | Institute Chair |
| 14. Dr. S.L. Dhingra, Emer. Fellow, Civil | Institute Chair |
| 15. Dr. Tarun Kant, Civil Engg. | Institute Chair |

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 Control Engineering Group 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 14th 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 Electrical 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 Ravi Poojari, Lab Attendant, CRNTS.



SHRI AFZAL ABDULRAUF HURZUK retired after 39 years of service on 31st December, 2009. He worked in the institute as Sr. Draftsman 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. Rajagopalan, PA to HoD.



SHRI SUBHASH GOVIND BHAWE 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 struck 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. Shakunthala 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. Murshillin, 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 Jr. 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 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 ever 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. Bhendigeri, Assistant Librarian.



SHRI SANDHU I. 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 GAIKWAD will retire after 20 years of service on 28th February, 2010. She worked in the institute as Cleaner in the Public Health Office.

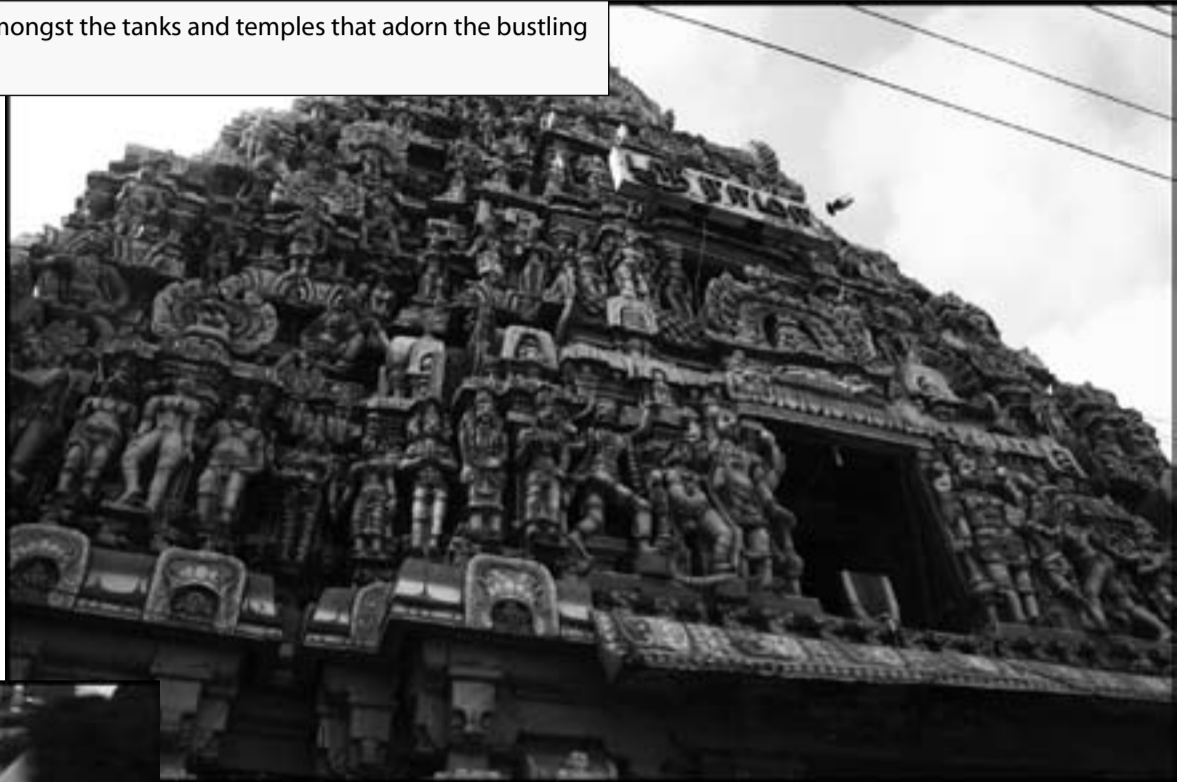
"Her work ethic was very strong. She always informed her superiors when she took even a little time off for her personal errands. Also, she was a very quiet worker. No one ever had complaints about how she worked."
— Mr. Tambe, Sanitary Assistant, PHO.

THE UPSIDE OF DOWN

Maruti versus Maruti ■ SWEETIE AHLUWALIA



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.



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



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



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

The molten metal is poured into clay moulds to create divine beings.



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.

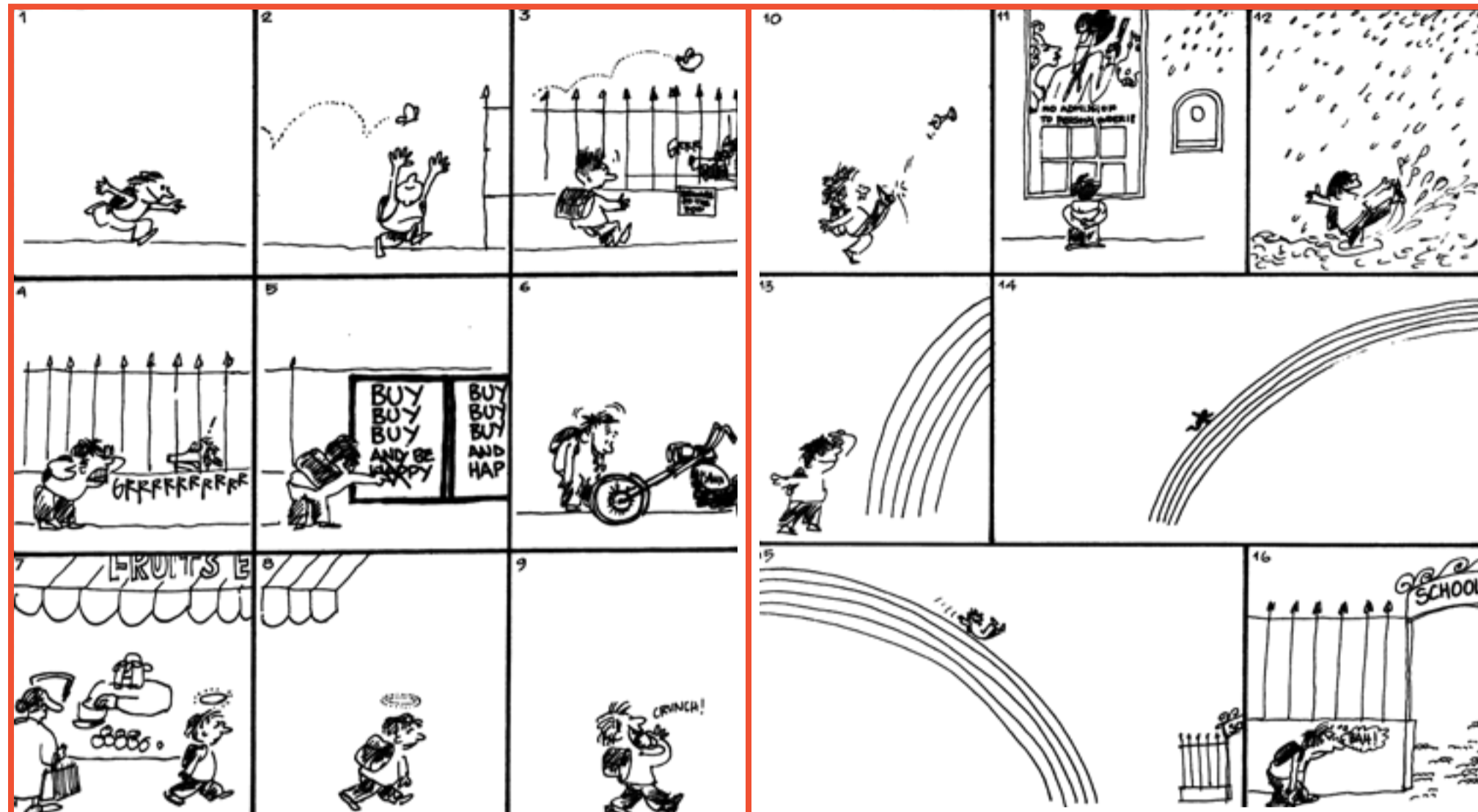


Photographs by Prerak Mehta and Jasvipul Singh Chawla

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 Ceccon.

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.

A WORLD OF UNCHANGEABLE RITES



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

MAILING ADDRESS