

The trauma of examinations

By Tejaswini G. Prabhu

Tejaswini graduated from 12th grade in May '04. After going through her 12th exam and a battery of college entrance exams, she considers herself an (exam) survivor. The young author describes how exams dominate the life of any High School student today. She lays bare the traumatic experiences she underwent and examines the various factors that lead to the notorious 12th grade neurosis. The article was published in 'Teachers Talk'.

The trauma of examinations

In the past few years, exams have become a part and parcel of my daily life – in fact, a central point of my daily routine. By the time I had passed out of school, I had written countless examinations. If by chance, I did not have an exam on a particular day, it marked a big empty spot on my schedule.

In 2004, the CBSE (Central Board of Secondary Education) students of 2004 were the victims of a whole new syllabus. We were literally laboratory guinea pigs, on whom the syllabus was tested out. The textbooks were upgraded and updated; and they arrived very late, sometime in late August. By that time we had already written many assignments and revision tests based on old textbooks.

In order to prepare for the ongoing tests without the prescribed textbooks, we got obsessed by the need to attend extra classes where experts and experienced teachers coached us. This led to more notes in our notebooks and more confusion in our minds.

By the time the books finally arrive with the “new and improved look”, now fatter than the old ones filled with the latest in science and technology, about half the school year was over. When the new books came, we were supposed to follow them, and not the notes given at the school, or the voluminous “guides” which were supposed to help students excel in each subject.

The high-tech parts in the new textbooks proved to be tricky even for the school teachers and the coaches. They began to write numerous letters to the CBSE Board requesting them not to include questions from the

“highlighted blue boxes” in the textbooks, for the Board Exams. These blue boxes contained the latest in modern technology, but as a result of the thousands of letters from various schools, they were omitted as they were regarded “difficult” and “hard to learn”. The saddest part of all of this was that the attitude of being “examination-oriented” prevented us from learning so many new things which proved to be very important, in the post-12th college entrance exams.

In the meantime, amidst all this confusion of content and syllabus, more tests and exams were conducted, irrespective of whether the portions were covered or not. Most often, the questions in the school examinations, according to the students, were, “unheard of” or “irrelevant” or “IIT level”. The teachers, not knowing what the Board expected, wanted the students to be prepared for the worst. This only led to a loss of confidence and low morale in most of us.

The other continual problem we faced was the fact that the textbook, the school notes and the “guides” contradicted each other. For example, there were different answers regarding the number of natural satellites of the planet Saturn. The old-fashioned guides say 5, the new textbooks say 10, while the encyclopedia says 16. Moreover, it is not just simple data that are contradictory. Yet another example is that of Galileo and the telescope. Everyone, by now, knows that Galileo was not the one who invented the telescope. But the textbooks continue to state so, and ignore the fact that it was the Dutch optician Hans Lippershey who invented the telescope in 1608. And

that Galileo built his first telescope in 1609 after hearing about Lippershey's invention. Despite knowing this fact, we students had to continue to write what was wrong, in the exams just for the sake of securing marks. What are these exams trying to do? Test one's knowledge of correct facts or make one learn the wrong ones?

The other distressing aspect of the examinations is that it is a hindrance to thinking – especially in Mathematics. If a student finds out a shorter way to answer a particular problem, s/he loses marks for not writing the detailed steps. But, in later competitive exams, we are asked to follow short-cut methods due to a limit on time. But, by then we are used to the many steps that in order to learn short-cut methods, we joined coaching classes, wasting our money, time and energy. It is a vicious circle!

I strongly feel that the increasing competition and examination is a hindrance to learning in the true sense. A survey was conducted in my school where

students were asked whether they would continue to study if exams were done away with. The unanimous answer was "No". It is as if examination is the ultimate goal to learning. The word "examination" and the three hours that go with it determine our future. Nothing else matters these days. The word education itself has come to mean examination. The joy of learning new things through research and reference is lost due to the dull textbooks and tedious examinations.

Last, but definitely not the least, examinations spell mental trauma. The pressure to perform leads to the very well-known disorder "examination fever", which is characterized by various symptoms like sweaty palms, trembling feet, stomach cramps, anorexia, etc., etc.,—the list is endless. Examinations are the prime reason, why an increasing number of students (including me) think that school is a monotonous chore.

The author has written a poem about a student who would do anything to bunk a test-day in school.

One of the many things that Sushma Iyengar (Kutch Mahila Vikas Mandal) did was to inform the Tamilnadu government about chemicals developed by Excel Industries Ltd that help in the quick decomposition of bodies. "Bodies were being dumped in the pits, dug up on saline soil, which does not facilitate quick decomposition," she says.

The state government immediately contacted the Gujarat government and the Gujarat State Disaster Management Authority airlifted eight tonnes of chemicals to Chennai. In many areas of Nagapattinam, these chemicals were stacked in burial pits which were close to water bodies.

State government officials say this intervention by Iyengar supplemented the huge epidemic prevention effort of the state government's public health services.

– from 'Batting for the dead' by V K Shashikumar



The Wise Brownbird

By Sanat Mohanty, a volunteer with AID

Sanat is an AID volunteer and lives in Minneapolis, USA. Besides working as a scientist, he volunteers with local community organizations and is interested in alternative ways of life and community based on principles of nonviolence. He is actively seeking out various forms of media for conversations on alternatives.

The wise brownbird

Akhand Parasnath was a small brownbird – like thousands of brownbirds that you may or may not have noticed. He lived with his tribe beyond the mountains yonder, where the mighty river that flows through the plains is but a young stream – bubbling and excited as it sings to every tree along its banks and brushes against every stone on its bed. It is a land of rolling hills and grassy valleys and forests fragrant with flowers you have never smelled and fruits that you can never find in the grocery store.

He lived with a tribe of other chattering brownbirds. They chattered with the rising sun, they chattered with the setting sun and they chattered when the sun was mightily hot at noon. They woke up the valley with their chattering and the valley stayed awake till they had gone off to sleep. It was only after they had done with their chattering that the grasshoppers chirped and the frogs croaked and mosquitoes buzzed.

But Akhand was different. Ever since childhood, he was a quiet brownbird. He was smarter than the rest of his chattering tribe, he was sure. He observed the rising sun and the setting sun and knew when it would rise again. He watched the clouds move and knew when it would rain. He knew when the wind would blow and when the stream would rise and when the flowers would bloom. And he was sure that none of his chattering relatives knew about these things. It was only by chance, by following stupid traditions that they moved into the forests during the monsoons. And it was only by chance that they laid eggs so that the chicks would crack out with the coming of spring.

One morning, when he decided he was old enough, he told his parents that he was going to explore the fields beyond the forests. “Don’t go” his elders warned with various stories. “Old village stories”, he said, waving his brown wings. So leaving his village on the upper branches of the forest by the gurgling stream in the valley beyond the mountains yonder, he flew east towards the rising sun. After flying for three days and two nights, he began to notice that the forest had become less dense and the trees had become different. Akhand was excited. He was so excited that he could not sleep that night. Every half hour he would open his eyes to see if the sun had risen.

The next morning, with the rising sun, he set off, excited at everything he would discover. As the forest began to thin, he noticed a grassland. It was a sheet of green dotted with red. It was beautiful. And right at the centre of the plain was a blue lake with its water still. There were other birds – like he had never seen before. He was disappointed – he was not the first bird to see this place. But he was certainly the first brownbird, he consoled himself.

The birds here spoke a different language. And they looked so much prettier in their plumes and colours. He wished he could be like them.

He spent the first few days on treetops near the lake. He listened to the other birds and heard the animals converse. He saw the birds suck nectar from the flowers in the plains. And he saw the birds pluck out fish from the lake. And he began to learn their ways. He observed and learnt. It seemed so easy. You had to find a fish as you glided over the water and then

swoop down, grab the fish with your beak and take off. Just like those large white birds with the long beaks. But the first time he tried to catch a fish, his head hit the water and he tumbled over and lost consciousness. When he regained consciousness, he was lying on the bank with numerous birds – pink with long legs, white with a large beak and large wings, black with yellow beaks and spotted in black and white, green ones with red beaks and yellow tails – surrounding him. The lake gently washed Akhand's head with its lapping waters. The sun shone gently, warming Akhand's wings. As soon as he opened his eyes, the birds whistled and chirped and cheered.

The big white bird walked up to where Akhand lay and looked at Akhand's eyes, rubbed Akhand's head and then declared him ready as a reed. Ready to try to fish again, she said. So he learnt to fish from Hansa, and he learnt to suck nectar from the flowers from Chirpy, and he learnt to fly like he had never flown before. He learnt to dive into the water and rise out again. And he learnt to speak to the other birds.

Yet he did not feel as sophisticated as the others. He was just an ordinary brownbird. And so he lived in this beautiful country; happy and yet sad.

One day, right after his morning dive, even as his wings were wet, he had this urge for something sweet. So he flew towards the fields of green and red, to suck some nectar from the sweet red flowers. And as he fluttered near the flowers, sucking their nectar, the red powdery layer from the flower stuck to his wet wings. There he was—brown wings with red streaks. Beautiful like he had never been before. He stopped fluttering and looked at his wings. And he admired them. Oh, did he look handsome. It was the most handsome of colours, he thought. Red streaks on his brown wings.

So he rose from the fields and flew towards the lake where the other birds were having their afternoon nap. Look at me, he chattered. Look at me. Look at me. Oh don't I look handsome.

The white Hansa looked up. Yes, you do my friend, she said. And so did Mithu, the green beauty with her yellow tail. As did Corma, the black bird with his spotted wings.

But Akhand was elated. He was the best. And reaching the edge of the lake, he looked down into it. The still water reflected his handsome wings. How handsome he looked.

But then he started. The lake was stealing his colours by reflecting it. The lake was looking beautiful by stealing his colours. They were his colours, his beauty. And the lake had no right to them.

"You thief", he shouted, pointing to the lake. "You are stealing my colours. You cannot just take my colours. You have to pay me."

Everyone seemed stunned by such absurd reasoning. No one had heard such a thing before. How could the lake pay Akhand anything?

"But it's only your reflection, my friend", the Lake said gently, not knowing how else to reply.

"Exactly", yelled Akhand. "You are stealing my reflection to decorate yourself", the brownbird screeched.

The other birds tried to reason with Akhand.

"We all live together", Hansa said. "How can one bird pay another for all it gets from the others?"

Akhand was getting angrier. These petty, dumb birds did not understand a thing. He was the smartest – what could they teach him? Had he not flown three days and come to this new land and learnt everything they knew in a few days? He would have just as easily learnt by himself. And now that he looked majestic, he could pay whatever they wanted. These were his colours and no one would have them without paying for them.

"This is absurd", the Lake said. "How can you own a colour? It is a part of nature, a part of all of us? How can you own such a thing?" "How can you claim you own an event?" Air tried to reason with the brownbird.

"Yes", said the Sky. "Such payments will break down a circle of friends"

"Akhand is right", said the Sun, to every one else's surprise. "The Lake will owe the brownbird for taking his reflection. But every time the brownbird dives into the Lake for fish, it must pay the Lake. And every time it drinks water, it must pay the Lake."

"And he must pay me every time he flies through me", said Air. "And he must pay me for every drop of rain he drinks", said the Sky.

And so on went the fields, the trees and the birds.

"Oh! I will", said Akhand arrogantly. And having said that he rose up in flight. "There you fly", said Air. "You owe me now."

And suddenly Akhand did not know what to do.

Sky was angry at such behaviour and it turned dark. Clouds gathered and it began to rain. And as the drops began to fall, they washed away the red from the wings of the brownbird. The streaks of red disappeared. And Akhand was a plain old brownbird once more. All his arrogance was washed away by the falling rain. But now he had no friends, no one to take care of him, no one to love him.

With nothing else to do, and no one else to turn to, Akhand decided to fly back home. And he flew towards the setting sun. Feeling sorry for this bird, the Sun showed him the way. Akhand flew and flew. He was sorry and he was embarrassed. He had turned away from the love of his tribe and now he had lost the love of his friends. We will never know what he thought in his little head. But he thought long and hard as he flew for two days and one night. And when he arrived in the valley of the brownbirds by the gurgling stream beyond the mountains, he was a wise brownbird.

He lived with the other brownbirds, moving to the forest during the monsoons and taking care of the young when spring came. But he taught them to chatter less and think more. He had learnt to own things more valuable than what can be bought or sold. He had learnt to love and to care. And there he lives now.

No one knows how old he is. But he looks respectfully at the Sun, and nods his head to the Sky and waves his wings in the Air. He speaks occasionally with other birds passing by and murmurs softly to the wind and trees. And when I feel the need for some wisdom, especially when I think I am being arrogant, I go looking for that wise old brownbird.

Khemmarat Sorasit found his studio awash, his paintings floating around. The strokes that captured the sea in all its mood meant little now. All Sorasit wanted to do then was to educate people on how to deal with earthquakes and tsunamis.

Every morning, since then, Sorasit has been driving to Phuket's International Relief and Co-ordination Centre. He sits there in the hot sun drawing paintings of previous earthquakes. He has collected data on all the quakes that have hit Thailand in the last two centuries and is now willing to talk to anybody who approaches him.

– from 'With his sixth sense alert' by Harinder Baweja



Communal Violence

The following article about the rise in violence has been written by Dr Ram Puniyani

Dr Ram Puniyani is a member of Ekta Committee for Communal Amity and Secretary of Centre for Study of Society and Secularism, Mumbai. He is associated with various secular initiatives within the country and has been engaged with understanding the global and local changes that have resulted in communal violence, including adverse effects of globalization and the rise of fundamentalism, more particularly in India. He also runs a fortnightly email bulletin, Issues in Secular Politics. The books authored by Dr Puniyani include *Fascism of Sangh Parivar*, (Media House Delhi 2002), *The Other Cheek* (Media House 2001), *Communalism—An Illustrated Primer* (JP Publishers Mumbai 2003), *Communal Politics Facts Versus Myths* (SAGE Delhi 2002) and *Second Assassination of Gandhi* (Leicester Uni Press 2002).

Communal Violence

The last two decades have seen an acceleration of violence at the international and national level. This violence has left us deeply disturbed. While the images of Bosnia, Rwanda and Kosovo merge into the images of attack on World Trade Centre, attack on Afghanistan and Iraq at a global level, at home one has witnessed the riots in Meerut, Malyana, Bhagalpur, Mumbai and Ahmadabad. These have brought shame to the norms of civilization, norms of social behaviour and the concepts of human rights as such.

While there may be many factors responsible, close to home, one of the factors that has been very disturbing is the use of religion by the vested interests. The other factor has been the doctoring of mass consciousness by the powers that be and the prevalence of social common sense against the weaker sections of society. While the complicated mechanism by which the powerful nations create an atmosphere for their goals of economic interests is a chapter by itself, closer home the prevalence of myths and stereotypes against the weaker sections of society in general and minorities in particular needs a close examination. The myths and stereotypes form the base of the social common sense which in a way gives quiet sanction to the violence which takes place against the minorities.

In the wake of the Mumbai riots (1992-93) and the

Gujarat carnage (2002) one became more acutely aware of the role of prevailing myths in sustaining the violence, the apathy of state machinery and the silent connivance of a large section of civil society in the ongoing violence. Undoubtedly, while the forces behind this violence have meticulous electoral and other calculations in unleashing the violence, the large section of society comes to believe that those being killed in the riots are demons, the one whose religion is 'wrong', who 'deserve' all this, they have invited it onto themselves, they are being taught a good lesson so that now they will behave, etc. Small, petty facts and misconceptions are picked up from history, the pattern of life and global issues are misconstrued to characterize the particular community and 'silent' approval is granted to the most heinous of crimes. Undoubtedly in these rivers of blood, many others also join in to fulfill their petty objectives. Many in the society and state machinery look the other way at best and actively assist the carnage at worst. Gujarat was the limit where the state was the most active factor in persistence of the violence.

Around this time the debates about the ills of the minority come to the fore in an aggressive manner. This comes at the top of the prevalent myths which have wide currency in the periods when the violence is not at the peak phase, when we think it is a peaceful situation. One was shocked to learn that during the

Gujarat carnage a large section of Gujarati society had come to believe that whatever is happening is OK since those being killed are not good, they deserve this fate, as all those belonging to that religion are 'like that' only. It's OK. To cap it all, the butcher in chief of Gujarat was projected as the hero of the people.

These two processes, manufacturing consent for state policies on the one hand and the creation of social common sense are twins and their mechanisms overlap.

The combination of myths against weaker sections and the violence is creating a situation in which the two major religious communities are trying to create their own areas of residence. The 'mini Pakistans' and 'borders' are on the rise city after city. It is becoming difficult for Muslims to get the place of residence in many localities and areas.

This is creating a situation of ghettoization, which in turn has its effect on the social psychology of both the communities, more so of the one which gets ghettoized in the process. It tends to become more orthodox and inward-looking. The conservative sections rule the roost amongst these communities.

In this presentation we will focus more on the myths and stereotypes prevalent in India, how they have been systematically nurtured and promoted by vested social organizations and education.

One concedes that these myths are fairly old, maybe a century or longer. But it is during last few decades that they have got more entrenched in the social psyche. Here it is nobody's case that all the people tend to believe in those, but by and large the major section of society tends to believe in those.

The majority of such notions which have found currency relate to history, more so the medieval one. There are also the ones which pertain to the demographic patterns of society, and the other types, which link the religion or religious community to the

cult of violence called terrorism or more specifically 'Islamic Terrorism'.

The lack of logic in most of these is not difficult to demonstrate. But due to grounding on a particular form and content of education they get easily seeped into the mindset of the people. Let us take a couple of examples. Popular common sense believes that Muslim Kings destroyed Hindu temples. The oft-quoted example is that of Mahmood Gazni of Afghanistan. He did destroy the Somnath temple, time and again, but was it to humiliate Hindu religion or was it to act as the soldier of Islam, which does not believe in idol worship? Mahmood travelled all the way from Gazna to Somnath, leaving thousands of temples untouched on the way. He also did not bother to destroy the Bamiyan Buddha statues in Bamiyan close to his city Gazna. His battle with the King of Multan resulted in the decimation of the Jama Masjid of Multan. If he was on the mission to destroy temples he could very well have targeted the Bamiyan Buddha statues or hundreds of temples on the way. Why did he come all the way to Somnath? Somnath temple was a big repository of wealth, close to 20000 gold dinar worth of property was there in the temple. And that seems to be the logical reason for his onslaught on the temple.

Another ruler of Gazna, Masood, and a relative of Mahmood sent his armies to plunder a mosque in central Asia. That mosque also happened to be repository of wealth. Similarly a Hindu king of 11th century Kashmir appointed a special officer to uproot the idols of Gods, which were made of silver or gold.

Aurangzeb, the most ruthless king known in Indian history, donated many Jagirs to Hindu temples. The initial mosques of India were constructed by Hindu kings for the Arab traders who used to come to India for the trade purposes.

These are all well documented in the works of historians. Even logically it becomes clear that the goal

of kings was not religion but the expansion of their empires and accumulation of more wealth. But all this is presented in the language of religion, one way or the other, for the sinister goals of politics. It creates a sort of hysteria amongst the people. Apart from selective presentation of facts what is employed is the religious explanation of the motives of the kings.

Same applies to spread of Islam or Christianity. There have been different reasons for which the downtrodden have tried to escape the tyranny of landlord and clergy combine and embraced Islam, Christianity, Sikhism or what have you. What is important is to see that it is the social factor, which motivates the people to choose other religions in most of the cases. Attributing the factor of intimidation, violence or allurements alone to conversions is neither logical nor correct. But this seems to have caught the thinking of the people to the extent that such a doctoring of minds led to one of the blackest deeds of the independent India, the burning of Pastor Graham Stewart Stains, a leprosy worker in the villages of Orissa.

Interestingly the synergetic traditions developed by the interaction of Hindus and Muslims is totally left out in the narratives of 'Hate' which fill our books and which are dished out by the workers of communal organizations. The Bhakti (northern) and Sufi traditions are a great high point of this syncretism. All the aspects of our culture and civilization, food, clothing, literature, music and even spirituality are deeply influenced by this cultural intermix. But currently this is not a part of social common sense, so to say.

Even the battles of kings are presented on religious lines though one can see the presence of large number of Hindu courtiers in the administration of Muslim kings. Similarly Hindu kings during medieval period also had many Muslim officers in their court. Akbar had Man Singh as his General, Shivaji had Siddi Sambal as a general, Rana Pratap had Hakim Khan Sur and Aurangzeb relied on Jai Singh for his Deccan

expeditions.

Communal history was introduced by the British to pursue the policy of divide and rule. The history books introduced by them, James Mill's *history of British India* and Elliot and Dawson's *history of India as told by her Historians* interpreted the whole past through the angle of religion. Uncritical acceptance of the accounts of courtiers mixed with their own vested interests ensured that Hindus start hating the rule of Muslim kings and in turn the Muslims. The 'content' part of history teaching was greatly influenced by this communal viewpoint. In Pakistan, on similar lines, the process is turned upside down to glorify the Muslim kings and denigrate the Hindu kings with similar effect—Hate Hindus.

Fortunately in India during the decades of the 1980s the NCERT tried to bring history teaching on rational lines. Since this was uncomfortable to those who derive the legitimacy of their politics from "Hate other" it was an uncomfortable process and so the BJP led NDA regime tried to do the job of restoring the communal view point in the history books, the communalization of the history books. Apart from the content, the method of teaching does not encourage students to ask questions, to raise doubts which can act as a small corrective to this method of history teaching. The promotion of logic and reason are totally sidetracked in the methods of teaching and in education. To make the things worse the previous government also tried to bring in disciplines based on faith, like astrology, rituals, Karmakand and the like. The sole basis of these disciplines is to promote faith. This retrograde method and the communal viewpoint have a very dangerous potential for the coming generations. While at the superficial level one can say that a good deal of damage might have been done, it is sure that this very retrograde direction also has potentials which are very divisive and which lay the foundation of closed minds.

The post-colonial society like ours was greatly ridden

with the methods which were motivated, were meant to fulfill the interests of colonial powers. In the new administration, post independence, there was very little attempt to change the matters.

While a small change was discernible, the larger atmosphere of communal view points continued. Another reason for sustenance of this perverse social common sense was the conduit through which the knowledge was being percolated down, the teachers. Communal organizations had actively planned to infiltrate in the educational arena. To cap it all, the prevalence of these communal organizations in the social space kept influencing the newer generations and this thinking became the norm amongst most of the people.

Lately the commercialization of education has compounded matters. Students are more interested in comprehensive capsules which can be gulped to clear the exams. The place for critical thinking, innovation, quest for truth are dwindling rapidly. In

these circumstances the role of Government in trying to bring rational orientation and deletion of communal content and methods are a positive step. But poisonous thinking which has seeped so deeply into the society cannot be undone so easily. The most important aspect of the way ahead lies in the rethinking the method of history and shifting gears from a communal viewpoint to rational ones, to bring in the logic of society as a whole. To think of life as a multidimensional phenomenon rather than one revolving around the landlord and clergy, kings and the religious associates of the kings. Since the whole system is heavily infested the need is to initiate multiple efforts geared around changing the norms of discourse, the methods of discourse at the social and educational levels. From teaching to learning is a big quantum leap, one which again has tremendous potential in changing the pattern of our social thinking and social life.

A girl in faded yellow shorts and a bright top, anxious to know what's happening around her, can't stop playing hookey.

This is 10-year-old Jessinda. When the tsunami roared into Vedenayakkam Street (in Nagapattinam) she was playing hopscotch outside a neighbour's house. She heard people screaming that everyone should move to the terrace. She did not have time to run to higher ground, so she latched on to a chair. She was buffeted around the room by the waves, but she did not let go of the chair. Her last memories are those of her mother's panic-stricken wails. Jessinda lost her father, mother, and two brothers.

Jessinda knows that her family has been washed away, but she still does not comprehend that her family will not come back.

"I am waiting for my school to reopen. Will the aunty (warden) allow me to go to school?" We ask why she is keen on school. "I want to be a collector," Jessinda says.

from 'After the deluge' by V K Shashikumar



The Politics of Education

By K Ramakrishnan

The following article is a slightly modified version of Ramakrishnan's Presidential Address at the Indian Academy of Social Sciences, XXI Social Science Congress (1998): (Parallel Sessions on Education). Prof. Ramakrishnan has been the Director of the School of Management, Bharathiar University, Coimbatore. He has also been a member of the Syndicate of Bharathiar University. Prior to his entry into the academe, Ramakrishnan has worked in the sales, marketing and finance areas of Esso Eastern Inc., for a little more than five years. He has been a consultant to the private as well as public sector enterprises and to international agencies. His research interests are largely in the area of management of public systems, particularly in the education sector. Prof. Ramakrishnan, who had his engineering education at the College of Engineering, Guindy, has had management education at IIM, Ahmedabad as well as at the University of Hawaii, Columbia University, University of Minnesota and Pennsylvania State University.

The Politics of Education

There is no need to point out the potential of education as an empowering mechanism, and that now education has been accepted as the fundamental right of children up to 14 years. But have we, in these fifty years since India became independent, really exploited the potential of education or ensured that right to all the children? The answer to the first question may be a qualified 'Yes' and to the second a resounding 'No'.

Unfortunately, the qualified 'Yes' is no reason to be even mildly happy. For we have utilized education as an empowering agent of the more dominant sections of society to keep the poor and disadvantaged always oppressed. One might almost claim that India today is what it is on account of our failure on the education front. If we had a sound education policy and met the promises made in the Constitution, chances are that people would not have been taken for a ride through caste and communal politics; they would have also chosen a different path for development. If you think it is a tall claim, so be it; but not a claim taller than that of the present-day economic reformers who are on a liberalizing, privatizing and globalizing spree.

A recent survey by the Unicef and Gol indicates that there are approximately 1.36 crore working children in India. 40000 live on the streets of Chennai city alone. If you think that poverty is the major reason for these

children being out of school and working or eking out a living by picking rags, begging or stealing, I must warn you that your thinking is the result of your tendency to look for easy escape routes to wriggle out of problem situations, without attempting to solve them.

You will trace their poverty to their parents' laziness; their lack of enterprise; father's drunkenness; and of course their lack of education and a sense of misplaced priorities! You will come to the conclusion that in the long run overall economic development is the solution to the children getting into schools and staying there till they successfully complete their education. As somebody pointed out, in the long run we are all dead! For a change we ought to be myopic; what should we do in the here and now to ensure children (and anybody else who missed earlier opportunities) get quality education which is recognized by society and which enables them to earn a living with dignity? That is the question to which I would like to share an answer with you. I put forth some logical arguments for my vision; if they are flawed, let us discuss them so that the vision becomes clearer and a mission is born.

What is wrong with our education?

I need not dwell on this theme too long. Numerous commissions and committees have time and again reported on what is wrong in our education system.

The most recent fashionable trend is for committees to work on reducing the “burden of curriculum”—in most cases, just chopping off a few lessons in textbooks!

The real hidden agenda of education seems to be to stream people right from childhood into the categories of toilers and parasites. The curriculum right from the pre-school stage is designed to condition a minuscule minority to accept theory through rote learning (*a la* Vedic learning?), eulogize white collar, particularly ‘managerial’ work and look down upon skills and crafts as ‘non-intellectual’ occupations. Some lucky artists (and cricketers?) who form a minuscule proportion of the population are of course exceptions!

Children who cannot stand such slavery in the early years drop out at various stages of the education pyramid. Unfortunately, they are rewarded only with slavery to those who had compromised in the early years to stay in schools and colleges to become Government administrators and business executives. Till recently some artful politicians, despite their lack of education, managed to get into the group who enslave others; but it is becoming more difficult now; hence politicians and bureaucrats have started going after a PhD degree.

Of those who put up with the formal education, not so much out of compulsion, but because they were better endowed than many others, with a capacity to absorb a lot of learning, many end up being co-opted by the globalization process. They migrate to the West or work for transnational companies which are out to suck the third world as much as possible, whether it is by dumping inconsequential products such as soft drinks and chewing gum or by the sophisticated manipulation of financial markets.

The conglomerate of these parasitic groups (some of us cannot deny our membership in them) makes the policy (education policy included) decisions governing the society. What else can we expect but a set of policies which will ensure continued dominance for them and their descendants? So, what is the remedy? The first step is to acknowledge the existence of such

a situation and to commit ourselves to fight against it. Those who are willing to so commit themselves may be more open to my subsequent arguments and possible prescriptions to bring about a change.

Education for Life

I challenged earlier the notion that poverty is the major reason for children being taken out of school by their parents and put to work. A study conducted by me a decade back – but still seems not out of date - indicates that nearly 70% of the children who dropped out of schools had done so not on account of their parents’ desire for them to be gainfully employed but for other reasons, all of which are in one way or another related to the schooling process. (These are) children feeling incapable of coping with studies, children afraid of being bullied by teachers or older children, children unable to get into a school in the middle of a school year in a new location to which parents have migrated on account of work, these were the majority. I have found that interesting pedagogy and affectionate teachers make children from poorer neighbourhoods also perform better.

Even among those parents who pulled their children out of school for employment, the dominant perception leading to their decision to pull their children out of school was that the schooling does not give any income-earning skill training to the children.

Most of the drop-out children who were working, largely for very low wages, or as a household help, surprised us by indicating that they enjoyed work more than going to school. If this is the case with children of the primary stage age, one can imagine how older children, who probably do more meaningful work and get paid better, will look at the choice between school and work. Do we have a message here? I firmly think so. The learning mode when a young person is apprenticed to learn a skill or craft is very different from the learning mode in the school. Lot of observation of the skill being practiced and some opportunity to practice the skill is inherent in the apprentice mode. This aspect is something which

should be seriously considered.

As Mahatma Gandhi envisaged in his *Nai Thaleem* (later christened as Basic Education), Education must be centred on learning vocational skill of some kind. Depending on the aptitude of the child and depending on the environment of the community in which the child is educated, the choice of the vocations may vary. In most locations (even in some urban areas) some training in agro-oriented skills such as understanding the nature of the soil, tending it for appropriate crops and learning the rudiments of efficient farming or gardening may be one choice. Crafts which do not involve heavy manual work such as pottery, weaving, toy-making, rope-making, drawing, etc., can be introduced in small doses right from the primary stage. The emphasis should be to imbibe a culture of work habits and appreciate the ways in which natural resources can be best utilized. Primary stage children should not be expected to become well trained workers in any trade.

You may wonder as to how the '*Nai Thaleem*' concept can be proposed again in the new paradigm of globalizing economy while it did not take off in spite of the euphoria of the newness of the Republic of India. Unfortunately *Nai Thaleem* or Basic Education met its demise even before India became independent. A full analysis of the reasons is beyond the scope of our brief discussions. But, it may be suggested that the implementation of Basic Education by the Congress Governments of the diarchy period was based more on a symbolic reverence to Gandhi's ideas, rather than being based on a full commitment to the concept leading to thorough planning and adequate support. The class biases of the stalwarts of the freedom struggle have also been dealt with adequately in the vast literature on the freedom struggle. Thus if we retain the spirit of basic education and avoid the mistakes committed in the earlier efforts of its implementation, we will move towards a skilled society, with skills appropriate for a modern yet sustainable economy.

Vocationalize School Education

One of the mistakes to be avoided is that of treating basic education as the choice for the poor and general education (whatever that means) for those who are not! The compulsory and free education provided by the state must be the same for everybody. The choice can be only with respect to the vocation. In order that overcrowding does not occur in a few vocations, a large number of vocations must be included in the elementary and secondary stages. Students must be able to learn at least one secondary vocation preferably related to their primary choice.

Irrespective of how modern we become some of the basic vocations will always need trained people. Masonry, carpentry, plumbing, electrical wiring, repair of simple machinery, ancillary health services, typing, tailoring, and printing and binding (small scale) are but a few examples of the numerous vocations in which personnel will be needed forever.

Unfortunately today most of these vocations are to be learnt – for a majority of those who get into such trades—through long periods of informal apprenticeship (as in the case of masonry, carpentry or automobile repair) or through self-financed and profit-oriented training shops outside the formal school (as in the case of typing, tailoring, etc.). It is a pity that even graduates in computer technology and computer science often choose to enroll in more job-oriented computer courses at huge cost in private computer education institutions, though most entry-level computer workers can do well with a good high school level education in which computer training is appropriately built in. Isn't it ironical Madras University feels proud to offer 'add-on' courses for their undergraduate students – at extra cost of course – in order to prepare them better for jobs?

Thus, significantly vocationalizing the education right from the primary stage to the college stage is the most important educational reform we should bring about. Of course such large-scale vocationalizing will mean the requirement of resources several times larger than what is being spent today on school education.

Imaginative ways of raising the resources must be thought of.

Distance Education: Alternative for the future

Currently distance education has become possible for a large number of individuals through programme run by many universities. Setting aside, for the present, the need to significantly improve the quality of such distance education, let us recognize that distant education is going to be the most cost-effective alternative for our society for a long time to come. In fact, in order to give an opportunity to all those who dropped out of school, we have to resort to a massive expansion of the open school system and aggressively market school education combined with vocational training through this mode. That will be a strategy in favour of the poor and the women the most of who, in our culture, have been taken out of school once they attained puberty and become house-bound. The success of the open school education may facilitate the process of breaking the barriers for radical reforms in the formal school system and make that system achieve the objectives of education outlined in the beginning.

Resource mobilization

A frequent argument against vocationalization is that the level of resources required for an effective vocational school education or open school education is far higher than we can afford. I feel that this argument reveals the lack of commitment to strategies in favour of the poor. While we should welcome the educational cess being collected on the sale of certain services, we must collect a cess from people who have had the benefit of state subsidized education and who are currently employed gainfully depending on their level of education and current income. Those who have completed high school through the state-funded system may be asked to contribute half-a-per cent of their annual income; persons with a degree 1%; and those with post-graduate degrees and professional degrees may pay 2% of their annual income as education cess. The employers should also contribute

a matching amount. The amount should be exclusively used for education.

Such a scheme will have another effect in favour of the poor. Today, even for jobs which require, say, only a high school level education (e.g. clerical assistants, typists, etc.) graduates and post graduates compete. The levy based on educational qualification will discourage both the employer and the potential graduate blindly going after degrees. In any case when high school education becomes more purposeful through vocationalization for most of the people, mindless pursuit of higher education as a potential passport for an organized sector job will naturally diminish.

Yet another suggestion, unpalatable to many of us in the academic field, is that of reducing subsidies for higher education. I do not dispute that an ideal society must make available as much of educational opportunity as is desired by the people. But what should be the order of subsidy on a per student basis for different levels of education, in the context of a society where illiteracy is nearly 50% and hardly 10% of the high school aged children have completed high school education? At best the subsidy on a per student basis may be the same for all levels. One may argue that it should be more for the school education, in order to make it more attractive and meaningful so that everyone completes high school education. After that has happened, we can increase the per student subsidy for higher education, across the board.

Higher education must be subsidized on an individual basis through scholarships and sponsorships in return for commitment to serve the government or the sponsoring institution for a specific number of years. All others who would like to pursue higher education must be prepared to pay a significant proportion of the costs. That way the resource crunch for school education can be solved to some extent.

But today we subsidize the professional students the highest, the university students the next highest and the primary school students the least. It should be exactly the opposite for a few decades till we get all the children of school-age, complete school education.

One can even argue that primary school teachers must be better equipped and better paid than teachers at higher levels. After all, the foundation must be built strong. The learning at higher levels of education is more through students own efforts in any case and the teachers are to act more as facilitators.

Teacher Development

In this context we should also seriously consider the possibilities of inducting teachers for higher education from among those with experience in lower stages. Teachers presently at the primary and secondary stages must be encouraged and facilitated to enhance their educational qualifications and preference must be given to such of those who have qualified themselves to move up to the higher levels of education. Experienced teachers must be rewarded and recognized by being made responsible as trainers and resource persons who constantly strive to bring the most recent and appropriate pedagogical methods into the education system. The District Institutes of Education and Training (DIETs) in most states seem to be far from achieving such objectives. With accent on vocationalizing school education, teacher training institutions will have to be significantly expanded, equipped and supported. A number of para-trainers must be developed among the various craftsmen and technicians in each community, so that each school has a set of resource persons for various vocations whose expertise can be utilized as and when required.

What I have outlined are only sketches of the diverse strategies we have to employ in the field of education to ensure that the fundamental right of the child for elementary education is ensured and the women are enabled to become economically independent too.

Mobilizing People

If these and many more such strategies have to be developed and implemented appropriately, the pressure should come from the people. A sustained movement by the working class for education relevant to their needs as the top priority is crucial if government policies have to be changed from the present elitist priorities in education. Mere reservation

of opportunities for an education, much of which does not utilize the natural potentials of the people and prepares them only for vocations pandering to the consumerist culture, should not be considered as the major concession obtained for the disadvantaged groups. Radical reforms as outlined above must be the ultimate objective.

Parents, teachers and educationists at all levels should work to get the education as a priority agenda item at all levels of local government, starting from the Gram Panchayat, every neighbourhood school should be supported as well as monitored by the local community through active parent-teacher associations and local education-resources-groups. Teaching as a profession must become one of the most respected professions as in the past through the conscientious work-culture of teachers as well as their behaviour as exemplary citizens of the community.

All that can happen only through sustained campaigns akin to the freedom struggle. The time has come to launch another struggle, this time for an education system which liberates all from the shackles of economic inequality, caste and community prejudices, gender bias and unsustainable consumerist culture. We owe it to the basic philosophy of education which warrants it. To quote the report of the Education Commission: "Democracy affirms that each individual is a unique adventure of life. The function of education is the guidance of this adventure to the realization of the potentials of each individual in the face of the actual world of men and things. It aims at the development of the individual; the discovery, training and utilization of his special talents."

Indigenous Learning Cultures—Basic to Sustainable Total Literacy

by Dr L S Saraswathi

Dr L S Saraswathi has over three decades of experience working with people in the rural areas of Tamil Nadu in South India, especially in the field of non-formal education for children as well as adults. She has spent a lot of her time and energy focusing on the approach to children and adults in involving them in the learning process. Her special field of interest has been evolving methodologies integrating the people's present practices with the academic field of study. This article was published in ABD 1995, Vol 26, No.1.

Introduction

It is common experience with all of us that we “learn” when we experience a sense of joy while involving ourselves in an activity. This kind of learning is thrilling in that it is natural and spontaneous. The social settings in which such natural learning occurs are the learning cultures. Learning cultures facilitate the individuals and the community as a whole in finding a way of life. (This) functionalism is central to whatever is learnt.

Study and observations of folk mathematics in rural areas of Tamil Nadu in South India showed clearly the process of natural learning with its core of functionalism. This paper intends to highlight briefly the insights gained from the study regarding the learning strategies inherent in folk mathematics and their possible applications in planned educational activities such as adult/literacy programme.

Study and Observation of Folk Mathematics

This section includes practices in enumeration of sets of objects, in measurement and in a few forms of recreational mathematics.

1. *Practices in enumeration of sets of objects* are focused on convenience, functionalism and are specific to the objects being measured.

(a) Convenient unit-sets of agricultural produce requiring counting vary with produce, considering the

ease of handling for counting with speed. The unit-sets vary from naturally occurring bunches (bananas and coconuts); counting on fingers in fives at a stretch (banana leaves, cow dung cakes), the volume of produce a hand can hold (betel leaves, paddy seedlings), a load that can be carried on head or shoulders either as bundles (sugarcane, bamboo), or specific-size containers such as nets (fruits), baskets (fruits, tea leaves), sacks (fruits, tea leaves).

(b) These unit-sets may also vary according to the quantum of produce in a specific village. Betel leaves produced in large quantities in a village were counted differently from the other villages.

(c) The multiples of convenient unit-sets are used to reach the counting of large-sets. For example –

1 pidi (handful) = 1 mudi (knot) = 10 seedlings

10 pidis/mudis = 1 kalasam (cone) = 100 seedlings

100 pidis/mudis = 1 kattu (bundle) = 1000 seedlings

(d) The names used for unit-sets and their multiples have meanings and can be visualized in concrete forms.

(e) Ingenious ways of counting are found. For example beedis are counted keeping a bunch of them in the circular space created by bringing together the tip of the thumb and the tip of the forefinger and looking at the arrangement of the beedis in circles – 3 at the centre, 8 around the 3 and 14 around the 8 making up to 25 (3+8+14) in a kattu (bundle) and 40 kattus

make 1000 and 25 kattus make a packing.

(f) Estimations of quantity of objects are frequently done fairly accurately. It is observed that it is common practice with people. They believe that they have this ability due to their experience in estimating quantities. The basis for estimations are explained by some as the size of the objects and space occupied by them. All these indicate the functional nature of the counting process and natural ways of computation in multiples of convenient unit sets which are locally decided. The learning is by participating in the production process with those experienced in agricultural production and marketing through the individual efforts of observation, imitation and practice.

2. *Practices in Measurements*: The use of units of measurements for measuring the dimensions of length, volume and time in day-to-day life was studied among people of rural Tamil Nadu. The following were the findings.

(a) People used a variety of units, non-specific or specific differing in the types of unit base. Non-specific units in length for example include tall-short, shallow-deep, long-short, big-small, etc. These also include slightly more specific ones such as the depth of water in terms of the number of steps immersed or the extent of rope length that gets wet, distance in terms of number of houses, arm girth, and hip girth in terms of bangles, belts etc. Rainfall was measured in terms of levels of lakes/tanks, levels of water collected in vessels or grinding stone kept in the rain, the flow of water, duration of the rain, and whether the rainfall was sufficient for one ploughing or more.

Specific units include body units such as finger length, finger width, span, cubit, etc. British units are related to the body units such as inches, foot, yard, furlong, mile; metric units such as mm, cm, m and km.

(b) The types of units used are situation specific and object specific. Because of this nature of measurement the whole evolution of the units of measurements is

practically visible in the villages

(c) Estimations of measures of length, volume and time are made frequently and fairly accurately also. Bases for estimations can be explained by a few, but the majority have a feel for them but are unable to explain.

Here again, all these point to the highly functional nature of the measurement process. The learning is by observation in totality of life as lived by the family and the village community. It is extremely practical to use a variety of units for different objects in different situations. Obviously in general, there is a kind of consensus as to which type of unit to use for what and when. Learning to inter-relate the various types of units used in different situations will enhance the ability of the people to use variety of units the way they want to.

3. *Practices in Recreational Mathematics*: Rural Tamil Nadu has a rich folk-lore of mathematical riddles, folk-games and folk-art of kolam incorporating the concepts of number systems. Following are some examples.

Mathematical Riddles

A riddle is a problem of puzzle. It is generally presented as a question or statement or a story with a question. It is formulated in such a way that some ingenuity is required to solve or answer it. The purpose of presentation and resolution of riddles is to develop thinking and imagination through enjoyable experiences. The contents include elements of nature as well as people's beliefs, customs, thoughts and ideas. The structure is generally simple and limited and also metaphorical in that something is related to the other or compared and contrasted. Feelings, rhythm, the power of words, analogies as they occur to people – all of these find expression in riddles. Observations in rural areas showed that riddles are always presented in groups. Children and adults alike join together and go on even for several hours

presenting and resolving riddles and also creating riddles. An intense sense of wonder pervades the whole atmosphere. The power of verbal learning could be felt in such informal learning situations.

A publication of a book of riddles in Tamil Nadu included 2500 riddles. They are of different types which include mathematical riddles. Mathematical riddles are descriptions of life situations of problems involving questions related to quantity and selection of appropriate strategy to deal accurately with problems. Some samples of riddles from rural Tamil Nadu are presented here:

(a) Seen by two, taken by ten, eaten by one, who are they? (eyes, finger, mouth)

(b) Two that roam around, two that look at the sides, two that hear the rising sounds, two that extend to take objects, what are they? (Legs, eyes, ears, hands)

(c) There is one tree, it has twelve branches and each branch has thirty leaves. What are they? (Year, month, days)

(d) In a village, there was a lotus pond. In the pond, a few lotus flowers were in bloom. A few bees came humming. Each bee tried to sit on a flower. One bee was left without a flower. Hence bees sat in pairs on each flower. This time a flower was left without any bees. How many flowers were there and how many bees came? (3 flowers and 4 bees)

Folk Games

Games are leisure-time activities that are fun and bring delight. These games have rules and can be indoor or outdoor. Some games are seasonal. The games are played mostly in groups. Within groups, individuals take their turns. Many play in pairs or as a whole group. When some play many watch with much interest. Games are also seen as those played by children (boys, girls, both), adults (men and women) and both adults and children. These games help develop physical and mental skills. A publication in Tamil indicates 126

different kinds of traditional games in Tamil Nadu almost all of which are still being played in rural areas. Songs and conversations are part and parcel of some of the games played. This is true especially with children's games that are played with a view to develop their language ability. The majority of the games have in them arithmetic and mathematical concepts and also enable the participants to develop some of the basic mathematical skills such as decision making, predicting, counting, using the four operations, making sets, understanding probability and so on. A sample each of a simple and complex game are presented here.

Blowing Tamarind Seeds

Two or more can play this game; children as well as adults play. Those who play bring as many seeds as they can and pile them up in the centre. Each player takes a turn to blow the pile three times and pick up the seeds one by one without touching or disturbing the seeds that are closer to the one being picked up. If a neighbouring seed shakes while picking up, the player loses his turn. While blowing the seeds, the mouth should not touch the pile.

The force of breath employed in blowing the pile widely scatters the seeds. This facilitates picking up a large number of seeds by the players and makes it an enjoyable and absorbing game. Counting of piles of seeds, comparing with other's catch, getting enthused to scatter more seeds next turn are all observed while the game is in play.

In seasons when the tamarind seeds are available in plenty every house has a gathering for playing this game. Though children play this game in large numbers, adults play it too and enjoy it.

Pallanguzhi or Pondi Attam

This is one of the very old games played mostly by women as an indoor game. It is played in the open as well. This game is generally not played at night. Two

or four persons play the game. There are several variations of Pallanguzhi Attam. Play continues for several hours. A few play, many observe, assist and enthuse the players.

Two rows of seven pits are dug in the ground. Depending upon the kind of game, the pits are filled with a specific number of seeds. Some use a foldable wooden frame in which the pits are scooped out. Some use such frames made out of metal.

One of the games using the fourteen pits is called Pasu Pondi. Pasu is a small set of four and Pondi is a large set. Seven pits on one side are assigned to one player and those on the other side to the other player. Each pit is filled with five stones or seeds. The one who begins empties one of the pits that belongs to her and distributes the seeds one for each pit in clockwise direction. She continues the process by emptying the pit next to where she ends the first set of seeds. This continues until the end, when if she finds more than one empty pit, she gives up the turn to the other player. If she finds one empty pit next to the pit where she ended, then she captures all the seeds gathered in the pit on the right side of the empty pit. This is called a sweep or pondi. After the sweep the players change ends and the other one starts. Once the seeds from a pit are opened for distribution, the seeds that get collected subsequently in sets of four (Pasu) could be taken by the player who owns the pit. If all seeds that remind get to one side, the first game is over.

The second game starts with the players filling the pits (five in each) with the seeds they got with the previous game. Both the players may have got enough seeds to fill all the pits or one may have fewer in which case the pits which could not be filled are not part of the next game. The game goes on until one of the players does not get even five seeds to fill in one pit. Here the game ends and begins all over again.

Folk-art of Kolam

Kolam is the most popular of the visual folk-arts of Tamil Nadu. This is believed to be 5000 years old. This art is done generally on the floor at the place of workshop, main entrance to the house. The designs are made with admirable ease. No tools are used. The ingredients used are rice flour or powdered quartz (kind of white stone). Hence it is generally white in colour. The flour is taken between the thumb and the forefinger, and dots are made and lines are drawn. The designs are produced using dots as bases. On special occasions different colour materials are used. They are dry colour powders produces from soils, leaves, charcoal, plant roots burnt earth, bark of trees, and colored stones available locally.

These designs are handed down from one generation to the next through the process of socialization. These designs are generally made by women. Young girls start learning this art through observing older women practicing it everyday. Every year during the month of January for a whole month, the whole front yard of the house is filled with kolam designs everyday. This is done early in the morning after sweeping and cleaning the place with cow-dung water. During the month several women join together and make these designs. Many take this opportunity to study different designs, counting dots and looking at the connecting lines. In other words, kolam as an art is focused during this month. On festive occasions, especially those connected with temples, many women jointly undertake the responsibility of filling the vast floor space with kolam designs.

The kolams are mainly of two types – single unending line kolams and multiple line kolams in which cutting and connecting of lines are done. There are kolams in which lines are drawn around the dots and others in which dots are joined. With increasing the dots a simple design can be enlarged.

The movements made at the time of designing kolam

are considered to be natural movements. Arithmetical operations of enumeration and computation of addition, subtraction, division and multiplication are possible while counting dots, rows of dots – equal number and unequal number. Besides, mathematical abilities of enlarging designs sustaining proportions, adjusting to uniformity and symmetry, maintaining proportions, perception of visual imagery and widening the visual field could be developed using this art. Cognitive skills of understanding spatial relations is in-built into this art. It is amazing that with a set of five dots in a row and five rows of five dots, one can produce one lakh or hundred thousand different designs. There is immense potential for creative expression. Each kolam design has a name that is meaningful to people and hence easily identifiable.

Folk-ways of learning include several other forms. In this paper only a few forms are introduced to indicate, understand and discuss indigenous learning cultures.

Learning Strategies in Folk-Mathematics: The Study Pointers

Some of the distinctive learning strategies in the indigenous learning culture are as follows:

(a) The learning situation is the social setting of home and neighborhood, wider community of extended family and village as whole. This social setting has some important features that facilitate the natural learning process. These enablers are 'age-sets' and 'multi-age-group' and these facilitate collective learning which is also kind of non-competitive. Team work becomes possible as the setting affords the collective wisdom of its members. There is diversity in that the members have different strengths, styles and attitudes; the congenial environment to learn through fun-filled activities.

(b) The individual learning strategies are observation, imitation and practice in real life activities rather than following verbal instructions.

(c) The learning process involves immersion of learners

(children and adults) in an environment where mathematical challenge comes naturally

(d) Learning takes place through metaphors and symbols, which are psycho-emotionally related, unlike the condensed symbols used in mathematics

(e) Learning is context-specific and hence highly functional. It brings in the question to the learner – "how does this work in this situation and how does this fit my world-view"? In this mathematics is a system of codification that allows describing, dealing, understanding and managing reality.

(f) There is inherent potential in the indigenous natural learning process for the learning to acquire higher order cognitive skills as indicated in the recreational mathematics section. These skills include the ability to use language actively as in riddle presentation, resolution and creation.

In the light of the study pointers it could be said that there are two basic problems in adult education/ literacy programme. They are – a) ignoring and debasing what people have, how they learn, what they learn and b) assuming a great division between verbal learning and literacy and hence suppressing verbal learning in order to promote literacy.

Both are attitudinal problems of the programme planners and organizers. They are reflected in the methods and materials and in the results showing high drop-out rate and frequent atrophy of skills.

General Suggestions for Planning a Sustainable Literacy Programme

The indigenous learning cultures are the basis on which the planned literacy programme is to be built. This would mean facilitating a process of Friere's 'Cultural Synthesis', in that the learners should be enabled to systematize the context-specific learning to see their inter-relatedness. This process can help in widening their life perspectives while still preserving the context specific use of their learning. At some point they see the written form of literacy as a part of their

learning continuum and hence a part of their culture. This is how and when the programmes become sustainable.

This implies actions in terms of the following.

(a) The planned educational programme should be location-specific so that it is in tune with the cultural context of the people in the programme.

(b) The materials are to include materials that help in creation of an environment for literacy, verbal cultural context, process for reflection on its efficacy and limitations, discussing the literacy need, and materials for literacy learning suited to a particular environment.

These materials could be prepared with the people in the program.

(c) The methodology of teaching and learning is to be participatory as it is in the indigenous learning cultures. There should be emphasis on the informal nature of the learning activities facilitating involvement in the activities.

(d) The training of the programme organizers is to underline the indigenous learning cultures and their application in literacy programmes. The training becomes crucial as the change in the attitude towards the indigenous learning cultures is the key factor.

They call him Hatman Dinapala for his fascination with hats and his ability to charm people off them. Every other day you would see him sporting a new one out to sea. That day, as he reclined leopard-like on his grounded boat, Dinapala was showing off a brand new one he had managed off a Japanese relief team. "Nice one, nice fitting, nice colour, new hat always feels nice."

It had been ten days since he had been out to sea. Ten days since he'd lost his family to the waters he thought his best mate – wife, teenaged daughter, three younger sons.

A friend from his village – near Kasgoda, about 100 km south of Colombo – takes up the story: "He waged on in his boat, re rode it like those people in the films who ride wild horses, and while he was doing that he picked me up from the waves and picked another friend who was being thrown about....At the end of it, he had taken in 23 people. One of them died later because she had taken in too much water, but 22 people are living because of this one man who a moment ago had lost all his family in front of his eyes."

But he knows he will go back some day soon. "It will come, the sea will come to all of us, that is what makes us, we will all go to it one day, all the fishing boys, and come back with our catch and rest on our boats like I am resting now. But first I must find a way of repairing this one. This boat too will go back to sea."

– from 'The single-handed sailor' by Sankarshan Thakur



Why Bilingual Books

By Radhika Menon and Sandhya Rao

Radhika Menon is Managing Editor and Sandhya Rao is Editor of Tulika Publishers, a Chennai-based children's publisher. Tulika publishes books in several languages, including dual language books. It works closely with NGOs promoting reading literacy.

For about three years now, Tulika has been working closely with NGOs in producing and distributing books for reading literacy. At one computer-book kiosk in a village in Tamilnadu, volunteer Asha Sanjay noticed that children quickly familiarized themselves with what was available and were soon all sitting with two copies of the same picture book, one in English, the other in Tamil. While one child carefully read aloud the English story, another matched the text page for page in Tamil, and the rest of the small group listened. All on their own, the children had discovered and were experiencing the empowering nature of bilingual reading.

Cut to the principal's office in a leading school in Chennai. A Tulika representative is showing the principal their popular bilingual title. The principal looks at the book and then, somewhat disdainfully, says, "We'll take the book if you remove the Tamil text in it. Keep only the English."

Cut yet again to a classroom in another city school, the children's Garden school. Children are poring excitedly over a new book they have received. "Miss, English book!" a child exclaims. "Tamil also!" another exclaims. "In the same book!" a third child points out. The teacher smiles. The class is thrilled.

It's a strange thing. In our richly multicultural, multilingual country, bilingual books have only just begun to be taken seriously. Eight years ago, when Tulika pioneered the first such titles, there were, literally, no takers. Two years ago, its first and best-selling '*Line and Circle*' was produced in 23 different language combinations (i.e. English and another language) for a UK publisher. The languages included Serbo-Croatian, Kurdish, Arabic, Somali and Chinese.

For some years now, the UK has been at the forefront of bilingual publishing for children in order to cater to the needs of children from different ethnic and language groups, no matter how small the numbers in that country. Several countries in Africa too have taken recourse to the bilingual and trilingual approach in order to promote the learning of a new language while keeping alive the learning of their own native languages such as Shona and Ndbele and Xhosa. The approach stems from a recognition of the need to nurture the mother tongue, especially in cultures and situations where they are threatened. By combining the mother or first language with a language of power such as English, a double purpose is served: to preserve what exists and to preach what is new.

There are many colonial cobwebs clinging to the collective Indian psyche and culture, but this policy with regard to the bilingual approach in the teaching / learning / entertaining circuit is something we could adapt well to our needs. Bilingual books are an effective way of promoting meaningful literacy in India, through the promotion of meaningful reading based on comprehension and assimilation. They work especially and equally well with teachers and students. They are not the only way, but they are an effective way. And of course, as in all things, efficacy hinges upon the quality of the product and the efficiency of its use.

Today, there is no getting away from the global power of the English language. We are told that the only thing that stands in the way of China assuming world leader status is the lack of proficiency of its citizens in the use of the English language. So now, the English language is being promoted in top gear. However, we

are concerned about the status of literacy and empowerment among the majority population in India. Therefore, instead of resisting the language or submitting to its very poor third cousins removed, we believe that it serves our children well to be brought right into its embrace. Bilingual learning / teaching / reading makes it possible to access the 'foreign' language through one's own mother or first language. And, in several instances, it works the other way too. In the context of the fact that every day so many languages are dying due to disuse and neglect, it assumes a greater significance.

Prof. Jim Cummins of the University of Toronto has, for several years, been researching and advocating the bilingual approach to teaching. Of course, his research relates to North America where English is the first language, at least in most parts of that continent. He cautions that bilingual education is not a panacea that will "miraculously" elevate achievement levels among students. He points out that for such programmes to work there has to be a commitment "(a) to promote, to the extent possible, an additive form of bilingualism, (b) to collaborate with culturally diverse parents and communities in order to involve them as partners in their children's education, and (c) to instruct in ways that build on bilingual students' personal and cultural experience and that promote critical literacy; such instruction would focus on providing students with opportunities to generate new knowledge, create literature and art, and act on social realities".

Bilingual books (with one text in English) can also come to the aid of teacher who are weak in English and who feel unsure. Having the text in front of them make teaching a less daunting task.

All of us know, through experience, that getting into the formal educational system is a long-time battle that needs to be fought, but children cannot wait that long. Therefore, small charges need to be assayed and regions brought under the banner of the bilingual approach on the non-formal, supplementary reading front.

This is the philosophy that imbues much of Tulika's

efforts in publishing for children in the age-group 0 to 16 years, especially in the genre of picture books. Most of these books are available in several independent editions: in English, Hindi, Tamil, Malayalam, Kannada, Marathi, Gujarati and now, Telugu. The bilingual books are published in English as the primary text in combination with secondary texts in each of some of the languages listed above.

When we first realised the importance of and the need to do bilingual books, we had only western models to follow, not always best-suited to our needs, given our multiplicity of languages and cultures, economic imbalances, social disparities, educational demands and lacunas, and so on. But the most important thing was the realisation that Indians are naturally multilingual. So, when we advocate bilingual books, we are only reinforcing and working upon our strengths.

Broadly speaking, there are two ways to approach dual language books: one, keeping only the meaning in mind; and two, keeping in mind language learning. The latter incorporates words, meanings, sentence construction, syntax...and is the more challenging, but the more needed if we want to lead readers from one language into another. Therefore, the two texts in the book have to, literally, mirror image each other without distorting or misrepresenting the natural style and register of each language.

Easily said. This is why bilingual texts for learning language, one from the other, works most effectively for the younger, picture-book age-group. Here, the storyline or concept is kept clear, the text runs unambiguous. In other words, the text has to be 'translatable'!

But it works. That's what our experience tells us. The best books work brilliantly for literacy and reading programmes among children and adults because they are not textbookish and are not learning-driven, but enjoyment-driven.

Besides, the reader has two books for the price of one!

Integrated Education

By N Krishnaswamy, IPS (Retd.), Managing Trustee, Vidya Vrikshah

Vidya Vrikshah is an association of people drawn together by devotion to the free spread of knowledge. The activities of Vidya Vrikshah rest on participation of anyone who subscribes to the objective of the free spread of knowledge, devoid of profit. Vidya Vrikshah was started in 1998 and is an association of over 150 volunteers.

The activities of Vidya Vrikshah include building electronic archives and research, development and training primarily through the Centre for Disability Research, Development and Training. The primary objective behind this centre is to bring to the disabled, knowledge, information and skills that enable them to be fully integrated as equal members of the social mainstream. The Centre offers training for disabled persons, trainers and volunteers in the use of software that "translates" the use of learning aids into local languages.

Integrated Education

Integrated Education, in theory, is a great concept. But it implies an existing state of disintegration which calls for correction. And though everyone agrees on Integration, not all agree on how it is to be accomplished, or even, what constitutes true Integration. It is therefore desirable, indeed essential, that we must arrive at a shared and common understanding of all that it implies. One needs to look beyond mere scope, content, approach and method and start at the common basic objectives on which all these must be founded.

A fundamental objective of education would, of course, be to bring out the best qualities and capabilities in any child, across differences of sex, socio-economic status, caste or community, ability or disability. This objective should be to integrate all educational effort at all levels, starting with the home and continuing into school, into a single holistic process.

Every culture recognizes the mother to be the first and foremost teacher of all human beings, indeed of all living beings. "Naasti Mathru Samo Guruh," says an old Sanskrit sloka, which in translation reads: "None can equal the mother as a teacher". The mother establishes the starting point of the best qualities and capabilities in every child. Unfortunately however, the socio-economic organization and methods of the

present day tends to introduce a hiatus in the educational process between the home and the mother on the one hand, and the teacher and the school on the other. We have the sad situation of mothers and teachers, wittingly or unwittingly, working often at cross purposes, each claiming credit for the successes of the children or blaming each other for their failures. Should we not take a careful look at ways of bringing mothers and teachers into a constructive, cooperative and dynamic teaching relationship?

Education of blind children in India, indeed in much of the third world, represents an extreme example of a situation where there has been virtually a total break between home and school. Education for the blind has to be inevitably through the medium of sound and touch, and within the limits of her knowledge, even the so-called illiterate mother does a great job in this regard. But as far teaching the child to read and write, which inevitably has to be through Braille, she is today not equipped to handle. For that matter, the education system itself is not equipped adequately for that. The facility of teaching Braille is available only with a handful of Braille-trained teachers in a few distant blind schools to which most blind children cannot be sent, by reason of distance and cost. Braille-based teaching facilities are just not available in most mainstream schools. The vast majority of blind children

are thus excluded from the educational process and hence from the socio-economic mainstream, literally condemned to a life of poverty in the margins of society.

Vidya Vrikshah is committed to finding and implementing teaching solutions for the blind, has come up with a solution that attempts to address this terrible, unacceptable situation. The solution is in the form of a set of teaching devices, comprising what is called the Universal Braille Kit. These devices are very simple; some of them new, and some, old, long established ones. What is really new, indeed almost revolutionary, in the solution is the approach to spreading the use of these devices. The approach is to remove the mystique and technicality from the teaching of Braille and make it possible for anyone to be able to teach Braille along with other basic skills. Anyone, here, would mean any literate person, and this could include the mother, sibling, family member, local school teacher or a community volunteer. Back up this process of learning Braille by making local language based Braille reading material available – magazines in homes and textbooks in local schools – and you have bridged the gap between home and school for the blind child, which has so far seemed unbridgeable.

A few words here on the devices comprising the Kit would be appropriate. The Kit is designed as a school bag that contains the following simple and inexpensive devices:

(a) The Vasantha Braille Cube: is to learn / teach *how to read*. This a cube, much like the Rubik's Cube, carrying raised dots on its sides, which can be rotated to form any letter of any alphabet of any language in Braille, which can then be read by touch.

(b) The Natesan Braille Block: is a similar device to learn / teach how to form and read words in Braille.

(c) A Braille Slate and stylus: to learn / teach *how to write* (emboss) in Braille

(d) The Alphabet Plate: to learn / teach how to write in the normal form in any language.

(e) An Abacus: to learn / teach how to count and calculate.

(f) A Braille Geometry Set with a tactile drawing tool : to learn / teach how to draw and measure by creating shapes with embossed dots, and measuring and calculating dimensions like length, area, volume, angles, etc.

(g) Children's Braille Magazine: A sample of a Children's Braille Magazine in the local language to launch the Braille-reading habit, (to be sustained by a later supply); and

(h) Instructor's Manual: is a very simple Instructor's Manual (which includes Braille Code Charts for English and in Bharathi Braille, the national standard for Indian languages), which will enable any literate person to teach use of the devices included in the Kit to learn Braille and other basic skills.

The Cube exists abroad as a toy or as part of a keychain, but here, has been elevated as a full-fledged far-reaching teaching tool in the education system. The Natesan Block is an original design from Vidya Vrikshah. The other devices are old established ones. All devices other than the Alphabet Plate are language independent and can be used in any part of India or in other country – making the Kit truly universal in accordance with its name. The Alphabet Plate and Instructors Manual can be provided in different languages

All the devices of the Kit admit of shared usage by both sighted and blind children within an integrated classroom. e.g. use of the Alphabet Plate to develop handwriting skills; or use of the Geometry Box to produce drawings that can be seen and also felt by touch; or children's magazines that carry both ink print and Braille print versions. Beyond these physical and functional features, there are a number of deeper values implicit in these devices. Thus they become

part of a shared learning experience, where sighted children are drawn naturally into interactions with their blind peers, in ways that promote attitudes and practices of helpfulness, compassion and empathy. These are values that are taught by practice at home, and to some extent in theory in schools. But now these values can be brought into active play in the learning process in the integrated school environment. Here then, you have true integration at work at the personal level of the individual child, and also integrating home and school into fulfilling a fundamental objective of education, by instilling humanistic values, by initiating

the process in homes and sustaining it in schools.

The Universal Braille Kit is the outcome of one of a series of projects that form an integral part of Vidya Vrikshah's flagship programme called the National Initiative for the Blind. This is a programme that fulfils a holistic approach to bringing the blind of the country into the mainstream through education. Anyone interested can get fuller details of this programme from the websites of Vidya Vrikshah (www.vidyavrikshah.org) or of the IIT Madras with whom Vidya Vrikshah works in close collaboration (www.acharya.iitm.ac.in).

Pitipat Sricharirat, a third-year engineering student from Chulalongkorn, said, "Sometimes I don't know what to say but it still helps because at least they know that somebody cares about them." Sumsi and her husband Thongchai spend hours with such volunteers and have come to terms with the death of their 13-year-old son. A small tent is where they live after nothing was left of their house. Nothing. What Thongchai is not willing to come to terms with is being a fisherman again. "I can't even walk on the beach anymore. I'm looking for a vegetable garden now."

– from 'I'm not the only one' by Harinder Baweja

Human beings are obstinate: their will to live is infinite. Especially the fishermen who know the 14 names of the wind, who can sense a cyclone, who feel safe riding the high tide, who sing songs of the sea: the sea is the mother, they go to her lap, they understand the language of the choppy waters on a full moon night. All they know is from the sea. Skills, stories. Like Harikrishna, old and wise. He waves his hands in Argatthorai, deep inside the coast, 36 km from Nagapattinam, and says prophetically, "We will go back to the sea. Or else, the sea will come to us."

Ten days after the tsunami destroyed this fishing village leaving 24 dead, including 11 children flying kites on the beach, every boat, catamaran and fishing net is being repaired, every house is being rebuilt, every little bylane is being leveled, men and women have returned from the relief camp, re-fixing their lives, determined to begin anew. There's hectic activity. This village has guts. G. Sampat is building his house right there where it was washed away. "Hope is life," he sums up.

– from 'Tempered steel' by Amit Sengupta

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front cover description

*Of all the little things we seek,
our thumb appears to be unique.
In your thumbprint, you will find
lots of things, to open your mind.*

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