

Environmental Education for Life Support

Weaving Science into Folk Tale

by Nandini Gandhi

AS the primitive mind could not find a cause and effect for every natural phenomenon or event, it wove tales to explain the origin of the world and humankind. The stories knit together man, animals and nature in contexts that embody people's experience. Talking animals, birds and trees are often to proclaim divine revelations and eternal wisdom; or their characteristics are used to define a human trait or predicament. Day to day life, family happiness, children's adventures, love and fear of the unknown, greed, the ultimate triumph of goodness and virtue, contentment following many trials, the victory of the weak but upright, of the small against the mighty, are common elements in many tribal tales. An engaging mix of the ingredients of wit, warmth and wisdom, folk stories have traditionally not only served as a medium of amusement and entertainment, but also as a source of education. Moral or other lessons were subtly woven in, never intruding into the main theme of the story. A moral lesson or dogma was introduced in these stories not as an afterthought but as a very natural development.

Can this rich tradition of learning be explored to promote, for instance, the use of renewable sources of energy and catalyse environmental action in tribal communities? Can they be imbued with a modern idiom that draws attention to the issues which concern the earth's resources, the problems of deforestation, and the role of trees in regulating climate, bringing rain, providing clean air, food, fodder and firewood? Can folk stories and fables be revitalised to explain the "why and therefore" of issues concerning energy and the environment with scientific and social accuracy, while yet retaining the magic and flavour of the stories and their strong cultural identity? Can fantasy be used to give meaning to facts? Can the tales be universal yet specifically local?

What can a story tell?
Local folktales, nature myths and famous fables can provide a rich inspiration for developing learning-enriched science tales with a latter day relevance. Like the story of the goose that laid golden eggs, the principle of sustainable use of resources is explained by the tale of the tree that oozed a potful of golden syrup everyday. When cut, however, it is just a log of wood. Similarly the bundle of sticks that cannot be broken symbolizes unity. Analogies and metaphors are common teach-

ing aids in folk tales. People frequently use them to camouflage a message figuratively, to make it more palatable or amplify it for added impact through exaggeration. They condense learning by distilling the lesson to its essence. They compare qualities and philosophize facts and conclusions with humour and insight.

To give an example of the use of the nature myth format to explain natural processes — one of the science stories, uses the love idiom to narrate the cloud coming down to earth as rain to meet his beloved — the tree. In order to do so he has to find a way to change back to his

princess, who attempt to obtain the lost magic mantra from *bolta jhad* (talking tree) atop *bodhya parvat* (barren mountain).

Thus children who are the primary users of the package can easily relate to the characters. The prince and princess helped by the knowledge and wisdom of the wise men of the kingdom, and the participation of the community, successfully bring back prosperity to their distressed land — suggesting that children can play a significant role in ecological action if they know what to do, and how

contained and the teacher's ability to tell the stories without distortion or digression increased if they were simpler, shorter, had fewer characters, dealt with only one key idea, and were tightly knit in structure. Where the lessons seemed "add-ons" or where morals were told at the end of the story, the children lost interest in those ideas and did not remember them in later evaluation.

Thus the scientific folk stories, by "personalizing facts" in a socio-culturally familiar context, increases the cognitive and motivational value of the instruction. What needs to be tested critically though, is that they do not remain 'mere stories' but help the tribal child to expand her world-view, and apply this learning, to the perception and management of her environment.

Though teachers are of the view that the teaching package is more appropriate for secondary school children, it is the design team's opinion that if the story-telling is slanted to the pace of the primary school age group, many of the stories would be of interest to them. Introducing the basic ideas at the primary school level in tribal areas is vital as most learners do not stay beyond the primary level.

True to culture

While it is tempting to make the story representation more powerful and also "teacher proof" by use of media such as the animation films, or recorded cassettes, particularly in view of the limited skills and levels of knowledge of teachers and extension workers working with tribal children, it might also end up making the stories "student proof". This deprives them of the powerful teacher-story partnership that allows space for instructional decisions to be made in interaction with students — the creative inputs that teachers give an instructional strategy by "thinking on their feet". Besides, telling the tale in the local dialect, the teacher as narrator can be sensitive to the children's interest and grasp, and thereby make the instruction adaptive and flexible. Just as the folklorists of old brought in religious and social customs, food and dress habits, familiar surroundings and objects, and traditions to create a story true to the culture-complex of the region and its people, it was found that the teachers and non-formal education extension workers also brought in that local flavour to the interpretation of characters and events in the story. Not only did they give the story a local name and place,

they drew interesting social analogues to enhance scientific ideas.

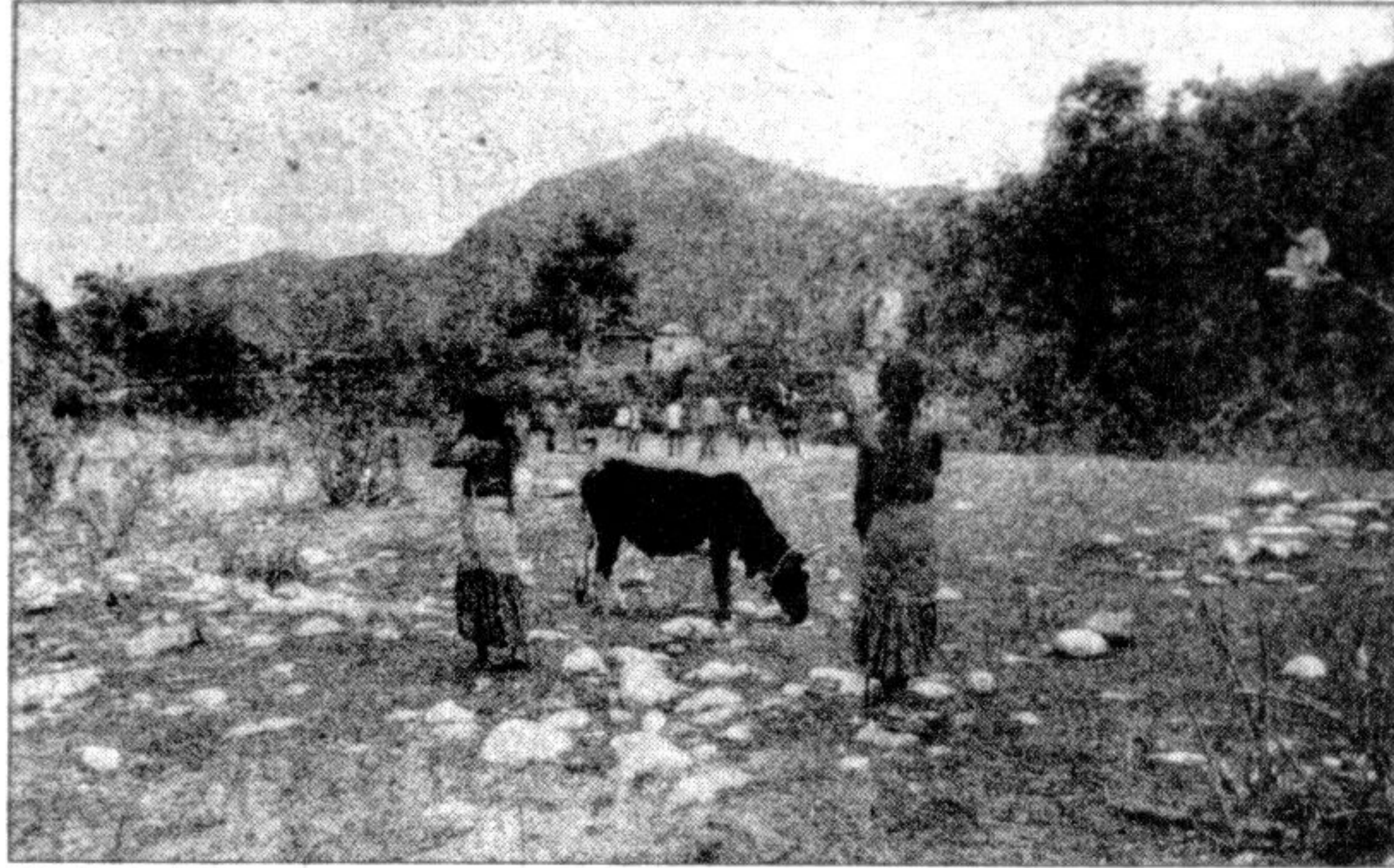
A good grounding in the relationship of trees, energy and environment with ecological, economic, agricultural, scientific and socio-political issues would be necessary before the teachers and extension workers are introduced to the stories. This is vital as the earlier observations indicate that both the teachers and non-formal education extension workers' awareness and comprehension of the issues involved is often hazy or incorrect, and therefore without adequate preparation and guidelines they may tend to distort the stories or shift or dilute the emphasis.

Guidelines for follow-up activities and experiments stress the crucial role these activities would play in extending the story into a reality that motivates ecological action. Also, teacher training would include experience in the art of story telling.

Simple songs and lyrics are also being woven into the package to encourage extended activities like singing and dancing. Riddles based on the lessons taught in the package are also being designed to evaluate the children's learning through fun and games. Local rituals and rites which can germinate experimental activity are also being identified for classroom learning. With each story module teachers will be provided with relevant background reading and ideas for further activities, experiments and games to extend the learning.

Tools for better living
It is clear that the human condition of living is tangibly and substantially improved by even a little education. The positive effects of even three or four years of basic education have been demonstrated with results as diverse as enhanced productivity, reduced infant mortality, longer life span and increased family income. By now virtually everyone agrees that basic education is not only essential to individual well-being, but also critical for the socio-economic growth of nations. By the same logic, it is valid to assume that increased levels of awareness of their relationship with the environment will help tribal communities to take positive action in the protection and management of the environment that sustains them.

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Courtesy— Future

basic form, and in this only his beloved tree can help. The use of elements such as an *agni pariksha* (evaporation of water to form clouds) and *akash-patal ni yatra* (to describe the water cycle) and *'vrah'* (the tree's tears of longing-transpiration) which urge the cloud to come down as rain, and the tree's desire to keep her beloved close to her heart, (moisture retention in the soil) help make the role of trees in the water cycle vivid to the tribal child. In another story, fever as a sign of sickness in the human body, has been used as an analogy to tell the tale of rising global temperatures and the greenhouse phenomenon afflicting the earth.

By analogy and metaphor

The business sense of the traditional *baria* (trader) has been used in the basic story, that highlights the value of the "by-products" of trees. At the end of the story the calculating *baria* concludes that trees are worth more when they are living

bond that they are able to establish with the learner. This is an important pre-condition for learning in tribal societies which do not respond to impersonal learning and are more intuitive and emotional than rational and logical in their responses to stimuli. They can also capitalise on the tribal communities inherent awe and reverence for trees and all things natural.

The story form helps the fact to find a place in the child's heart. This learning can be further concretised through experimentation. The experiment helps him experience the phenomenon, and thus consolidate his learning. Therefore a combination of tales, demonstration, experimentation, social observation and analysis appear vital to the form of the learning package to constantly relate fiction to fact and to the life and happenings around.

The package begins with the adventures of a prince and

Primary evaluations show that though most children related positively to trees, they were not aware of their crucial role in natural cycles. From the observations of this experiment it seems that the greatest strength of the stories is their ability to build "bridges of relationships" in a suspension of disbelief, thereby bringing the attributes of the physical laws of nature within the realm of their experience and understanding.

Since stories are associated with amusement and entertainment, children listened to them with a positive receptivity as compared to the negative disinterest that text-book lessons generate. Recall of the concepts in the stories was encouraging when compared to recall or grasp of the same ideas in the textbook lesson format. However, it was observed that the effectiveness of the stories both in terms of the children's ability to grasp the lessons they

Bridging the Gap Between Home and School

by Mehede Hassan

SAORAIL Primary School is a school in a village. The class rooms teeming with small boys and girls. The hub-bub of young voices reverberating. Even three months ago the scene was not so cheering. Attendance in the class was thin. But suddenly all that changed. When food-for-education was included in the compulsory primary education programme, interest in the schools grew tremendously.

One such student whose interest has been awarded is eight-year-old Shilpi Begum, a girl with unkempt hair. Shilpi used to study in class 3 of her village school, the Digna Primary School. But in September when the school-year was nearing its close she changed school and got enrolled in this school, the Saorail Government

Primary School, in Mokhtarpur union Khaligonj thana. With what benefit? Let us see.

Though her old school was located in her village, she could not attend her class regularly. She would have to busy herself along with her mother in household chores. She would have to tend the cow in the field and look after the goats. She has to do all these things because there were only three persons in their family. The mother remained preoccupied with her own household work and also worked as housemaid in other households. The elder brother Nasiruddin who is a boatman on the river Sitalakha leaves home early in the morning.

When Shilpi's father died,

she was six years of age and a student of class 2 in her village primary school. It was an earnest desire of her father that he would give education to his daughter, especially since his son did not receive any education. Her father was a mason. His death shattered all dreams. After that, for sometime Shilpi could not go to school.

Days went by. Her mother eked out a meagre living by working as housemaid. While Shilpi tended the cow in the field and the cow fed on the grass, she herself remained literally unfed.

They had no land to cultivate but only a homestead. Therefore after the death of her father her brother Nasiruddin had to look for work, and eventually got it.

Shilpi again got herself enrolled in school but could not attend her class regularly.

Household duties often kept her away. As her mother was a domestic aide in other households, she could not look after her own household. Moreover, it was not the intention of Shilpi's mother that Shilpi should spend her time in school. In her opinion, it was no use educating a girl.

But suddenly the mother's apathy was transformed into a positive desire. She learnt that if children were sent to school, not only the teachers would impart education but wheat would also be supplied every month. This kindled in the mother a desire to educate her daughter. The new facility, besides giving education to her daughter will also partly relieve the family's want and, besides, would also fulfil the wish of Shilpi's father. But in their village school food-for-education had not been introduced, it was introduced in Saorail Government Primary School some distance away. So her mother sent Shilpi to this school, regardless of the distance.

Speaking on the food-for-education programme Mohammed Fayeuddin, teacher of Saorail Government Primary School, said the government has introduced this in a few schools on an experimental basis. The programme is on in 18 primary schools of Mokhtarpur union, including two registered schools. After the programme was implemented average attendance in these schools has increased and the number of student has increased by 123 units. In the jargon of food-for-education programme a 'unit' means a student.

Under this programme every student is given 15 kilograms of wheat per month. But not every family is entitled to this benefit; only children of those families which are landless or own less than half an acre land and are in severe want are eligible for this benefit.

Not more than to students from each family will be entitled to it and a student, in order to qualify for this benefit, must have a record of attendance of more than 85 per cent. A list of the eligible boys and girls is prepared by teachers of the school or members of the school committee after proper assessment.

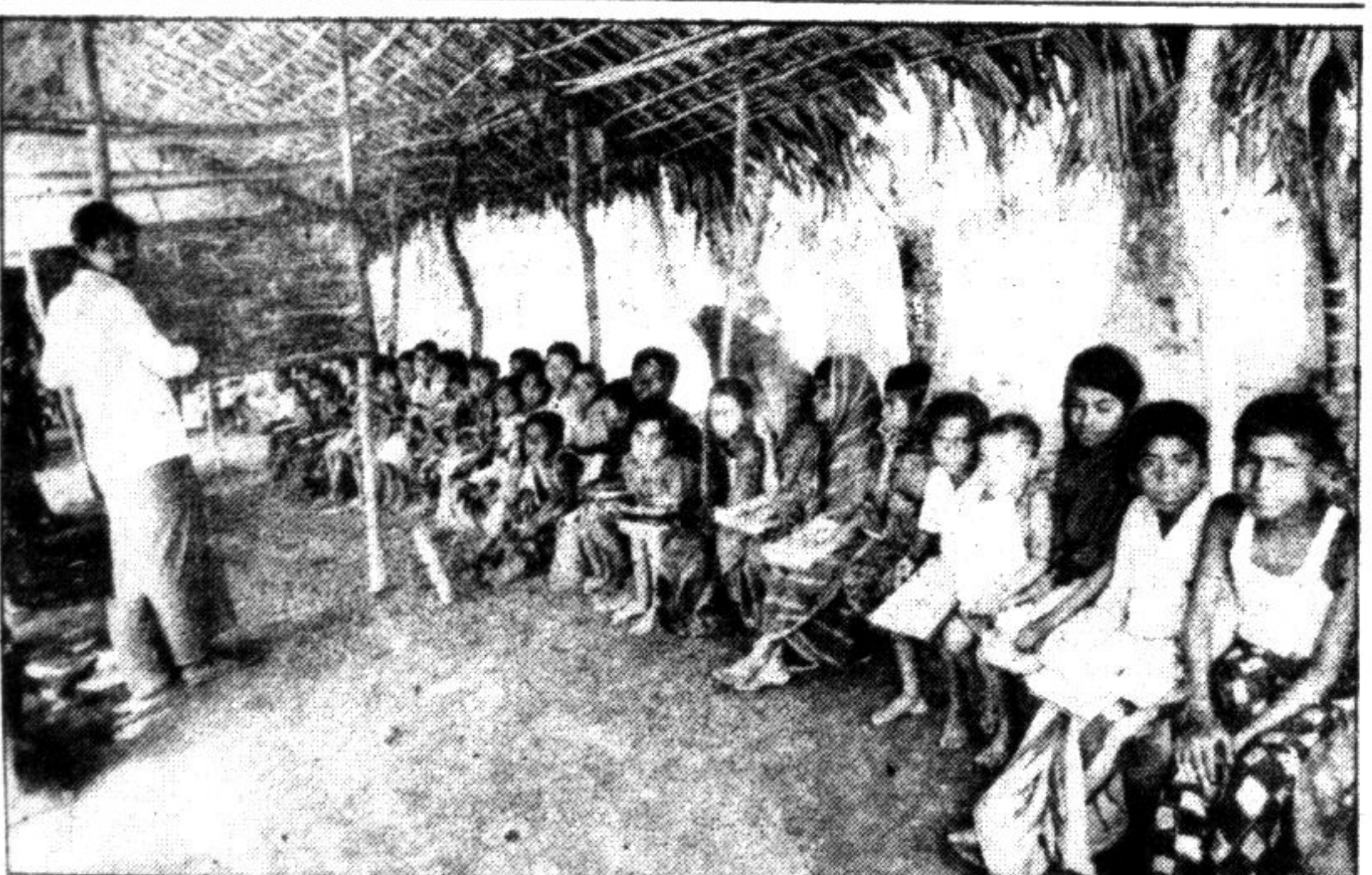
Fayeuddin said that the job of assessment in Saorail School has been completed by themselves. This did not pose any problem.

But transporting the allocated wheat from the thana food godown to the school is a

problem, as transportation charges paid by the government are meagre.

Although Amir Hossain is concerned about his wheat, Shilpi Begum shows no such concern. As she got admission after the assessment, she has not yet received wheat. From the third month she will be receiving 15 kilograms a month. Her round dark face lit up by a smile seemed to say, "Forget the wheat. What matters for me is that mother no longer forbids me to come to school."

— Development Features
Writer is a free-lance journalist



Bhola. An island in the south coastal Bangladesh. Primary education comes into life in the quiet village of Char Fession. The residents spontaneously raise contribution to start a school with volunteer teachers. As the teachers are well-known to their students, so are the students well-known to their teachers. That is a plus point for the school authority. The dropout in such school is insignificant.

— Photo: Rafiqur Rahman/Development Features

Just an old-fashioned space man

by Samia Islam

BERNARD Shaw was not joking when he said "Education is an admirable thing but it is well to remember from time to time that nothing that is worth knowing can be taught." Perhaps this is the motto that our education system follows — and none is more skeptical about this affair than the students themselves. One is not necessarily out of the clutches of student-life to sigh and muse that things were different and better then.

For example just the other day a concerned parent was saying how she was disillusioned when her 8-year-old came home from a renowned English-medium school to say "I don't want to go back, the teacher's rotten" not in these same decent words perhaps but it boiled down to the same meaning. Investigations revealed that the teacher, a part-time teenager fed-up with small children, had hit the child because (according to her) he was slow point to be noted is that the child has a reputation of being a quite good if not the best student. This story was bothering me a little so I was recounting it to another child from one of the best Bangla-medium schools of Dhaka. This ten-year-old looked at me like I was some ignorant scum and without turning a hair said, "you act as if this is something out of a horror movie, now don't pretend that your teachers never hit you" I was dazed for a moment but after regaining my senses I asked if any teacher had ever hit her. "Of course" she shrugged "Our English teacher

usually uses the duster". I might as well add that once I was a student of the same institution and looking back I think I turned out all right with or without the duster. How many years has it been, 9 or 10 maybe.

I met a cousin the other day who was worried sick about his SSC exam results. It was perfectly natural to ask him how much he hoped to score. Modestly he said that he hoped to achieve a total of over 800 marks. "Wow!" I gasped, "this boy must be a brilliant student" In our days only the best ever achieved more than 800 marks in SSC. Then suddenly it dawned on me that this was the age of super conductors, computer wizardry, Ninja turtles and question-banks. A boy who is any good should hope to score 900 or more in this face of an exam. Calling this an exam is a disgrace to its name. Either this charade should be stopped or (there is always a 2nd solution) 100 marks bonus should be added to the score of all students who passed SSC before this question-bank brain-child came out of the ICU. Now-a-days evaluating an actually good student is on the basis of his/her school certificate exam will definitely yield the wrong results. Back in the old days, well, that was 'the test for brains.

One must go on living in the present as Dickens who said "It was the best of times, it was the worst of times, it was the spring of hope, it was the winter of despair."



Only a few years ago, the literacy rate among girls was appalling. The primary school dropouts were mostly girl students. Today the scenario is fast changing. The girl child's enrollment and retention in schools is higher and is at par with boy students. Survey results indicate that of every five students, three are girls. The national literacy rate would have been much higher today, if the children's education got support of the politicians and society leaders 20 years ago.

— Photo: Rafiqur Rahman/Development Features

Teaching is What Matters

by Jamal Arsalan

TODAY children, specially those not attending 'international' schools study three languages at school: Bangla, English and Arabic. Both kinds of students also get familiarised with Hindi and some Urdu as well from Indian films. Pakistani dramas and films are in Urdu as a rule. If those pupils who study Arabic are fortunate, a tutor comes to the residence to teach them Arabic well enough to be able to read the Holy Quran in its original version.

Children begin their climb up the stairs of knowledge by learning about such supposedly common topics as the cow; writing a paragraph, an essay in both Bangla and English. But rare is the teacher who enables the child to see what he or she is and where the difference lies between a human being and a cow, namely the attributes of communicating in complex terms, building/creating, meditating. But never to feel superior to the cow or any other living being in terms of comparison. One cannot compare a human being with a cow or any other being. Each fulfils its own function on earth. A cow can sense some dangers, for instance, we cannot.

In fact, it is the cow from which we can learn — of an impending storm of formidable magnitude or an earthquake. Of course, we can do many things that cannot. So if there has to be any conception of superiority, it can be only one of knowledge,

not vanity — of our capacity in certain fields. If a cow has a number of drawbacks, we also have our weakness. It is getting along with what abilities we, as human beings, possess and can develop which enables us to mould our lives so at the end we can 'see' or say 'this' is our achievement.

Teachers can be more than a guide. When they are given a deserving share of the profits earned by the institute where they serve and which they practically build up along with the students, they inspire into securing brilliant results for the glory of that institute. "Earned", naturally includes government subsidies as well, since the Education Ministry does not hand out any help until and unless specific standards of performance are attained. Again, justified 'lobbying' or 'persuading' is also 'earning' as it involves diplomacy and hard work. Authorities are human beings too. Many decisions have to be made. Numerous are the deceitful. Presenting one's institution's case with conviction and clarity often becomes a prime necessity, when applications amount to Himalayan proportions.

Teaching is deemed to be the most respectable of professions. Minds are developed, feelings allowed to retain their sovereign infancy, while aiding the natural growth of one's personality (being assertive determined, brave... as needed; concisely,

this is the impact/impression one has on other beings) and character (involving such traits as integrity, being benign towards the deserving, firm towards the cunning or plainly wicked... in brief, these are the inborn qualities and not always easily perceived by the general world but discerned particularly by persons with worldly wisdom).

Yet teachers of our country are not provided with a better future. Rules of service are the same as in many other organisations, but many schools do not have any system for payment of festival bonus. The governing body of the school or the owner does not take such financial benefits as an essential part of a natural living style in spite of indulging in receiving 'bonuses' (not just 'a' bonus) themselves or oneself in various guises. For a factual example, let us consider a certain printing press where bonuses are paid, the owner and principal shareholder got two and a half lakh taka before Eid. The printing press personnel got paid some form of bonus; but at the head office, the computer section, arts and those doing the planning and execution somehow did not 'qualify'! As a matter of fact, they went to their village home for Eid without even their wages upto-date, or paid up for the current month. No wonder such employees frequently take every opportunity

they get to keep whatever comes their way instead of paying everything into the company accounts. The plight of many teachers is understandably worse.

Citizens of the country must realise or accept the given pragmatic truth that the government cannot supervise and fund every project. Our own resources have to be mobilised as in other countries. The business community has to come forward as they are the final and best beneficiaries of a smooth-working education system. This is because through such practical-erudite education, they find dependable, profit-making employees, on the one hand, and loyal, sympathetic customers on the other hand.

BGMEA (Bangladesh Garments Manufacturers and Employers Association), for instance, can help Bangladesh go a long way with training for their employees/workers and setting up schools — technical and otherwise — colleges, etcetera for the children of the employees/workers. Care for the welfare of the children of the employees on whom BGMEA rely for their profits will help remove a great mental burden from the minds of their employees permitting them to invest that mental energy in innovative approaches to higher productivity. BGMEA's role can be multiplied by other similar groups or associations to the benefit of teachers and the country alike.