

The Knowledge Revolution

OUR mother planet, Earth, has witnessed three revolutions of mankind, the agricultural, the industrial, and the knowledge revolutions.

The primitive nomad, homo sapiens, underwent many hardships mostly related to a migratory nature. The migratory human race then became settled. They founded villages. With its genesis on the bank of the Euphrates, somewhere in present Iraq, the idea of settling in some convenient place, preferably near a river, very quickly spread over vast areas of Asia, Africa and Europe. Agricultural/village civilization continued for 10,000 to 12,000 years. Life was slow and simple. Demand was structured and limited. The economy was based on barter exchange.

This system continued for a long period of history until the industrial revolution, led by Europe, swept the present First World during the last two centuries. The industrial revolution unlike the agricultural revolution, had an in-built push for knowledge application and technological innovation as a continuous process.

In the post world-war era, big investment took place in building universities. Investment in education emerged as more profitable than merely installing an industry. The knowledge revolution is characterized by investment in education. Career building becomes a normal phenomenon, an accepted way of life. Among those who can afford it no one questions why investment in education should have to be made. Skills thus developed are utilized subsequently for making labour more productive — or for a white collar status job, where one's education is appropriate and relevant to the subsequent career.

In considering the Third World situation, the critical question is — what type of education?

How far has education evolved in the light of need? Have we developed systems of education that give specific skills which that society requires? In fact in post-colonial situations most countries continued their colonial legacies, grossly failing to cope with changed circumstances.

In the Bangladesh context,



In Bangladesh, the felt need for education is not yet very great among the agricultural population. The country is badly need an education system suited to the needs of her village population.

The felt need for education is not yet very great among the agricultural population. They still significantly bank on the generation and transmission of rudimentary skills needed for agricultural operation. Here the potential for application of knowledge is yet to be explored. Agriculture is still primitive and traditional as well as socially exploitative. It has grossly failed to contextualise and emerge with innovation. The bitter result is, a

country with more than 80 per cent agricultural population, which is nevertheless deficit in cereal crops and has failed to enter into the international market. It is, rather, dependent for rice on those countries where the majority of people are not even involved in rice production. This situation is clearly related to the rela-

by **Mohammad Zakaria**

mand. Supply must adjust with needs. Supply must be generated in the light of needs.

The whole world is undergoing some sort of knowledge revolution. Some countries like Japan and USA, are skilled at sensing the needs of the future, and are making continu-

ous investments in education. And they are reaping the benefits.

As far as the future of Bangladesh is concerned, the most important resource is our human resource, albeit without the proportionate material/land resources. What we need is serious investment in education, need-based education, on an emergency basis. Not only to deploy our human resources here, but also to ensure employment in other

and individual-level strategies for developing manpower are also critically important. And these must be on a par with national priorities.

Most people in this country are rural, and the majority of the rural populace are landless. But, nevertheless, they work hard at different rural occupations. The challenge of Bangladesh is to make labourers more productive in these occupations. Making the labourers more productive in

agriculture, fishery, livestock, weaving etc, needs investment in education. But how? Do we take these occupants to schools? Is that feasible? Or do integrate earning and learning? It is a difficult question but answers needed urgently.

Most NGOs have education programmes. Among them BRAC's NFPE is the brightest. BRAC education programmes have shown how drop-out rates can be significantly reduced and quality of education can be improved even before economic conditions are improved. BRAC NFPE has shown how government primary education can be improved. Adult literacy programmes of NGOs, containing literacy, numeracy, conscientisation and skill development, are aimed at direct application of knowledge by the poor to improve their quality of life.

Transfer of science and technology from the urban sector into the rural sector is a must. Technology can not be imposed. It needs to be evolved in the light of felt need.

Bangladesh is a country of villages. Education here has not been developed to maximise village resources. In a country like Bangladesh where the majority of citizens are landless, education needs to be shaped in such a way that education emerges as an alternative resource for the landless. There are practical problems in redistributing land and other resources. But what is the problem in giving education resources to every citizen of this country? If the government gives them education they themselves will generate

other resources for their own survival. In addition it will facilitate the migration of our human resources to other countries. In a human resource-rich country like Bangladesh migration can be an engine of development. A major policy shift is badly

needed in this regard. Only then can the knowledge revolution really take off in this country.

The author is a village researcher and presently involved in participatory village planning. He is heading an action research NGO, GOUF.

GOUF

Integrating Learning with Earning?

Gouf (Gobshona O Unnayan) Foundation (GOUF) — Participatory Research And Development, an action research NGO is giving serious attention to this question.

What we believe is that production in various sectors like agriculture, fishery, livestock, weaving etc will only increase when labour is more productive. Labour will be more productive when learning and earning, theoretical and practical are integrated. An agricultural officer alone is helpless if the farmers are not becoming specialists through an experiential learning process. Similarly weaving has no future if it can not compete internationally with modern textile industries at the level of science and technology. This is true for all sectors of our rural economy. Without combining education alongside the rural economy Bangladesh has no future. The sooner we appreciate this at the policy level the better.

GOUF recruits a batch of Village Volunteers who undergo an academic course covering various aspects of village socio-economy. During the day they come to GOUF from different villages to study agriculture, poultry, livestock, fishery, afforestation, savings, credit, health, environment, power/structure, etc. and in the evening they return to the villages to teach the villagers what they have learnt at the foundation. So the teaching and learning is simultaneous with the hope of introducing some sort of continuous education within the village. Thus, also, the transfer of knowledge and ideas from urban centres are really transmitted to the long neglected villages. The group members democratically split the learning assignments under different topics, viz. agriculture, fishery, livestock, weaving, health, nutrition etc. We call it topic specialization. They do some amount of research on their respective topics in terms of collection and collation of data, till a concrete plan emerges. And then implement development education accordingly. The village volunteers are residents in the villages within their work situation. The rural development course by GOUF which is still in the evolving process combines action, research and training, abbreviated as ART. However, we still need to go a long way in terms of syllabus, grading, duration, teaching methods, etc.

Topic specialization is a must. By topic specialization, we mean the villagers' need to be specialists on different topics/subjects of their day to day need. Village specialization is a must because, within the village, capable of identifying the village issues which creates the foundation for short and long term village planning.

WHILE talking about improvement in the existing system of education in our country, we often point out the need for a change in the curricula — such as an introduction of new subjects, modifications in the syllabus and perhaps other changes related to pupil evaluation. All these we tend to suggest guided by our stereotyped experiences, accumulated over a long period of time, which, being taken for granted, have hardly been re-analysed in view of changing patterns of life in our culture and society. What is excluded from this paradigm is the teacher factor, that is, desired changes in the attitude of the teachers towards teaching, who are the most valuable resources in the whole process of teaching-learning.

The hyphenized expression in teaching-learning aptly shows the necessary link in the process and in no level of education is it more palpable than at the pre-school stage and the first two to three years of elementary schooling.

Who Should Teach Our Youngsters?

by **Nazma Yeasmeen Haque**

Herein lies the necessity of choosing carefully who should teach these youngsters, ranging roughly from age four to age eight, keeping in mind the need to make education a convergence of a serious business on the one hand, and lively and enjoyable to young learners on the other.

Viewing a job difficult that is basically easy, and the reverse, are both fraught with problems and therefore, can be thwarting to the performer. In the former situation, a teacher definitely manifests a lack of confidence and thus remains totally unprepared to face the task. In the latter, inability to comprehend the essentials of teaching these youngsters, who being ceaselessly exposed to an ever-increasing number of stimuli in their environment are much more informed compared to those of yesteryears, a teacher can not only impede but may

well harm the intellectual and attitudinal development of his/her pupils. Although in both cases, a teacher is not up to the job, nevertheless, it is worse in the latter case. Here the teacher misconceives the nature and demand of her task thereby self approving whatever she does in and out of class thus losing sight of actual requirements. Whereas, in the former case, a teacher at least is aware of the fact that she cannot cope with the task.

A corollary to not recognizing, or underestimating, the significance of the teacher factor, and teaching methods to be applied for these youngsters, is one very common and erroneous notion prevalent among many teachers in service and aspiring teacher. The misconception is that, with minimum educational qualifications and experience however inappropriate, and even oftentimes without any experi-

ence, it is easy to teach young children. In other words, to them, teaching at these levels can be anybody's job. The vital point that escapes their range of comprehension is that steering an unmapped mind can be truly baffling when one does not know when, where and how to start, or continue until a desired goal is reached. Education, as a dynamic process that should lay a solid base for the furtherance of learning, therefore, calls for a new outlook by those who make it actually work.

Among a number of qualities that contribute to the making of a good teacher of youngsters, the following are deemed essential in the context of changing patterns of the teaching-learning process.

First and foremost is the teacher's self-concept. Understanding of her own self

as a person, and as a teacher, defines and modifies her role in and out of the classroom, thus facilitating a smooth interaction with the children which is the key to the effectiveness of pre and elementary school teaching. A modern day teacher cannot afford to remain only a catalyst bringing about changes, but must herself be an adjusting participant in the whole process of teaching-learning. In order to be acceptable to the pupils, a teacher must be acceptable to herself in the first place possessing or always striving to acquire a well-developed personality with flexibility in trying to discern and accept similarities and individual differences among children, their innate abilities that await unfolding to reach their potentials. All these can become attainable goals in care of an ob-

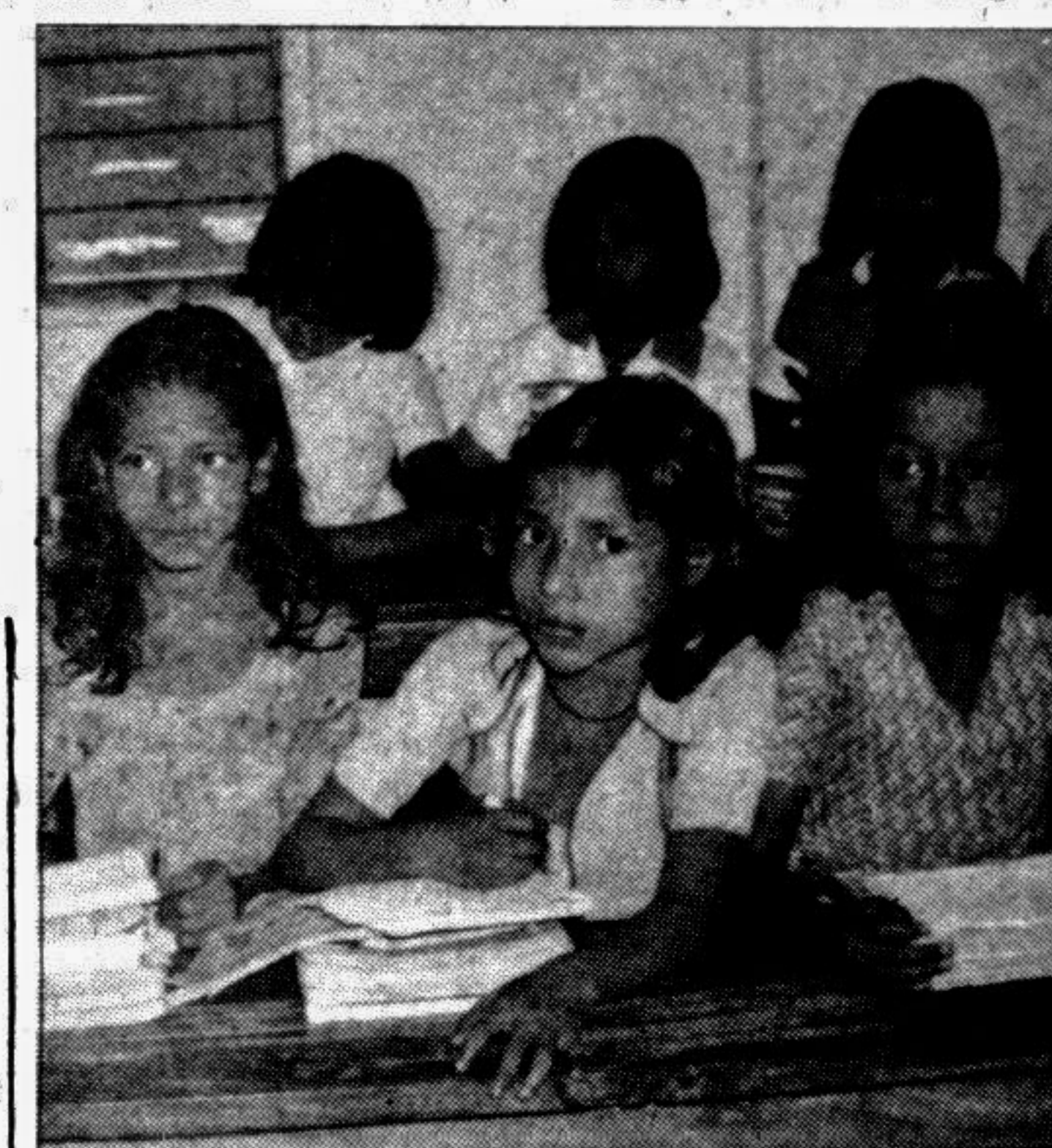
servant and willing-to-learn teacher.

While teaching at these levels becomes more and more child-centered, teachers of very young children are expected to speak in their language in order to elicit maximum performance from them and also gather cues from the children's conversation and interaction among themselves. However junior a class is, a teacher's competence lies in her ability to shift gradually from a casual approach, adapted to teaching in the beginning, to a solid and meaningful curriculum, maintaining such a transition as unobtrusively as possible.

Adults who observe children closely do notice how different they are from children, say, only a decade age, in more ways than one. To cater to their needs and demands within the mini society called school, a teacher must be pre-

pared to play her role correctly in changing times. The teaching points of all lessons, including co-curricular activities, must be clearly known by the teacher in order to be able to adapt them to changing circumstances. In fact, to summon the curiosity of the child of the twenty-first, a teacher needs to pace lessons much faster than ever before. And to

ners often go unnoticed, while any deviation meets with unfavourable criticism, which has a tremendous deleterious effect on the mental health of a child. By ignoring the socio-emotional development of a youngster, by remaining oblivious, little can be done to safeguard his/her intellectual development, which is why we are often caught in the rut of dehumanized education of youngsters. For the purpose of humanizing education, a teacher should not only be equipped with knowledge of



Views from the Village

'We Want to be Able to Sign Our Names'

by **Donna Hornby**

For tens of thousands of children in rural South Africa even basic educational facilities are not available. Yet a yearning to learn is growing. For their mothers, a school is of greater importance than clean water or firewood for cooking.

than their need for clean borehole water for toilets, for building-timber and thatch which have been ploughed up to make way for Mondli's plantation of gum trees.

"This is how our children will thrive in the future. You see how we cry because letters arrive and we cannot read them. We can't even read the signs when we walk along the road. We want to be able to sign our names — in writing, not with our thumbs," says Eunice Nkosi explaining why a school is so important.

Khangisile Sithole, 16, started school late and is in standard one, a class that normally consists of eight-year-olds, adds: "I want to finish school so that I can get a real job." A real job, she says, is "working in a white person's house in the towns," or, her truly ambitious dream, to become a teacher.

These mothers want primary, primary and high school facilities within walking distance. Of the two farm schools currently serving the community, one teaches the four earliest levels (normally children from ages six to ten) and the other teaches seven levels (from ages six to 13). Some children walk distances of ten kilometres to the schools.

"It rains the children don't go. The river gets full and they can't cross it," says Zodwa Simelane, a mother of four.

Once they have completed standard five, the children

then need money to catch taxis to take them to the high school in Louwsburg. This costs up to R50 (\$ 1=3.6 Rand) a month per child and most families in the area cannot afford it.

But, for Faith Zondi, the only teacher at Sithole Farm School, the problems begin long before high school: Her school is a small single room built out of wattle and daub from where she teaches 53 children spanning class one (the first year of schooling) to standard two (the fourth year).

To cope, she divides the children into two groups, leav-

ing one outside with a set lesson while she takes the other through the alphabet and basic arithmetic.

"Do you think you could tell the authorities we need another classroom and teacher?" she asks. "I do the best I can with God's help, but the children suffer in their learning."

Neatly dressed in a shiny synthetic floral dress and high heeled shoes, Zondi gestures to the children, barefoot and tittering under the gum tree at the sight of a visitor: "You can see the problems we have here. The children drink water from the drain pipe run-

ning under the road when they are thirsty. And they have no toilet."

She does not mention the absence of electricity and telephone, let alone the lack of coloured pencils, overhead projectors and computers which fill the urban government schools. Despite the problems Zondi has created two rows of weed-free vegetable patches and the entrance to the school is decorated with a small flower garden.

"I like beautiful things, and when the children learn they should be surrounded by

beauty," she says.

The other school shares similar problems of overcrowded classrooms and too few teachers: Vusi Nkosi, one of the three teachers, thinks the school is fortunate.

"Mondi helped us by grading the land so we could have a soccer and athletics field," he says, pointing to a grassless, pebbly piece of ground above the school. He is grateful too for the three lone-drop toilets provided by Mondli.

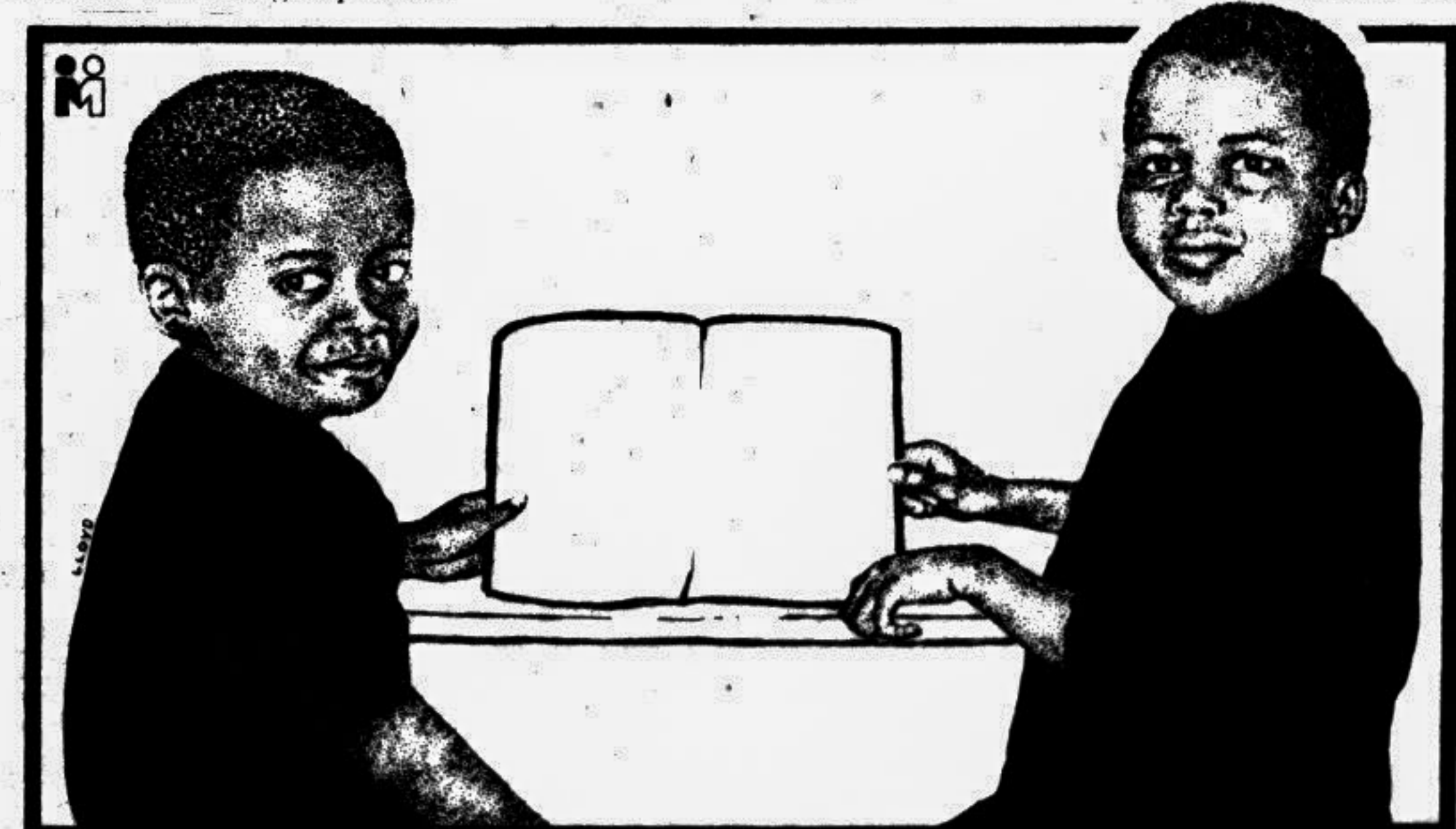
Then he laughs when asked whether the corrugated iron roof gets hot in summer. "Oh yes," he says. "Sometimes we must leave the classroom and do our lessons outside. It also gets very cold in winter. But we are happy to have this school because the children can learn here."

However, parents do not know that the teachers themselves are under-qualified for the task of broadening their children's horizons. The principal completed standard six (the eight year of official schooling, usually until age 14), never went to a training college and speaks only a few words of English.

Nkosi, with a matric and a couple of years observing other teachers at work, teaches three languages, maths, history and geography. "The professional won't come here," he explains. "The living and teaching conditions are too difficult."

And Ntombi Sithole pays the price. Armed with her metric, she wakes each morning at five o'clock, packs her lunch and walks seven kilometres to work on one of the farms. There she hoes potato fields and is paid R140 a month.

"But I'm saving," she says. "One day I will do a typing course and work in an office."



Mphakamiseni and Sindy Sithole share a notebook at their farm school

Rare Achievement of Buet Student

TWO research papers of ATM Shaifiqui Khalid (Tuhin), a final year undergraduate student of the department of computer science and engineering, Bangladesh University of Engineering & Technology, have been accepted for presentation and publication in the 47th National Aerospace and Electronics Conference (NAECON '95) scheduled to be held on May 22-28 at Dayton in USA. One of the papers is on "Seek Distance in Disk with Multiple Independent Heads per Surface" co-authored with MS Alam (Asst. Professor of PURDUE University) and Nayeem Islam (Researcher of IBM T.J. Watson Laboratory). The other paper is on "A Composite Mapping Technique for Simplification of Multi-Variable Boolean Function" co-authored with Farid Ahmed (PhD student) and M N Karim (Professor of University of Dayton). He jointly published another paper on "Ranking Players of a Round Robin Tournament" in February, 1995 in the Computers and Operations Research, Pergamon Press, Great Britain. He has already completed over 10 research projects. His proposed new mapping technique for Boolean function is a new contribution in the literature and will be known all over the world as "Khalid mapping" after his name. He has been invited to present seminars in a number of Universities in USA.