

## Education and training in self-reliance

MUHAMMAD ZAMIR

I must admit that I had a very pleasant surprise the other day. I was discussing with a friend about the disappointing nature and trend of our political process and the lack of understanding between our different political parties. Our conversation subsequently turned to extension of education in the rural areas. Aware of his being involved with female education, I asked him whether girls in rural areas were getting the chance of not only going to school but also the opportunity of any kind of training that would enable them to be self-reliant and earn a livelihood.

In response, my friend suggested that I see for myself a particular institution located in Nallapara, a remote village in the district of Tangail. He also invited me to attend the annual function of this educational institu-

Chairman of the Bangladesh Atomic Energy Commission.

Located in a rather undeveloped and inaccessible area in rural Bangladesh, the educational institution, Velayet Hossain Bahumukhi Uchcha Bidyalay is named after the late father of Mr M Delwar Hossain, the chairman of the school managing committee and the moving spirit behind the project. Mr D Hossain started the school after his retirement from government service. Sensitive about the absence of a good school in his village, he decided to spend his time, energy and his family resources on this project. In this he was greatly encouraged by his wife who has since passed away.

The school was started in 1993 with the aim of expanding the human development capacities for the rural poor in Bangladesh. The initial funding came from within his family members who donated not

Velayet Hossain Bahumukhi Uchcha Bidyalay demonstrated that quality education in Bangladesh need not be available only to the children of the middle class in Dhaka and in urban areas. It was proof that it can be provided also at the village level to the sons and daughters of the rural poor. The school is an example of not only how the human capacities of the poor can be developed through local efforts but also how their opportunities can be enhanced to graduate their families out of poverty without migrating to the cities.



Student assembly in front of academic building

a bit nervous about whether this idea would last and if people living in the city could actually run a school in a village on a continuing basis. There was also some unease over the question of co-education, a very delicate point in rural Bangladesh. The disturbing question of political affiliation and acceptance of the school by the Ministry of Education also caused some anxiety. However, it appears that these worries dissipated over time. What I witnessed was a success story.

The institution is now a model high school and has a total of 1438 students from different religious faiths (an impressive number, given the fact that the school is only nine years old). This includes 542 girls. The academic institution covers an area of nearly 25,500 square feet which includes academy buildings, a laboratory, common rooms, an auditorium and also special demonstration units for agricultural and trade courses.

The first thing that drew my attention was that all students in this rural environment were wearing standard uniform, the same as in any educational institution in Dhaka. This was

amazing given the fact (as explained by the Headmaster) that 53 per cent of the guardians were relatively poor peasants 11 per cent were day labourers, 7 per cent were weavers, 2 per cent were artisans and the rest were from slightly higher rural income groups like shopkeepers, teachers, doctors, businessmen etc. This was indeed a good mix. I also noticed that the presence of uniform had brought about a sense of discipline and dignity.

The chairman of the management committee explained that the school provides quality education not only in the traditional fields of humanities, natural sciences and social sciences but also imparts vocational training. This is done with the help of 34 male teachers, five female teachers and 10 other members of administrative staff.

Later, I found out that in the vocational training area, the teachers provide practical training in technical

subjects such as computer operation, electronics, house-wiring, motor winding and dress making. Instructions are also given in agricultural subjects such as livestock and poultry farming, horticulture and pisciculture.

This is done with the belief that such skills will enhance the capacity of the young to access higher education and also diversify opportunities for them with regard to self-employment and income generation. It was also explained that this was particularly relevant for those students who decide not to move on to higher education.

Apparently, this system enables the latter group to avail of the existing micro-credit facilities, either singly or through local co-operatives. This in turn permits them to start meaningful small ventures, near their homes in the surrounding villages, leading to creation of economic opportunities and general economic prosperity for the area. Some of the students were prompt enough at this juncture to point out to me that such a situation permitted them to avoid having to migrate to the city for work.

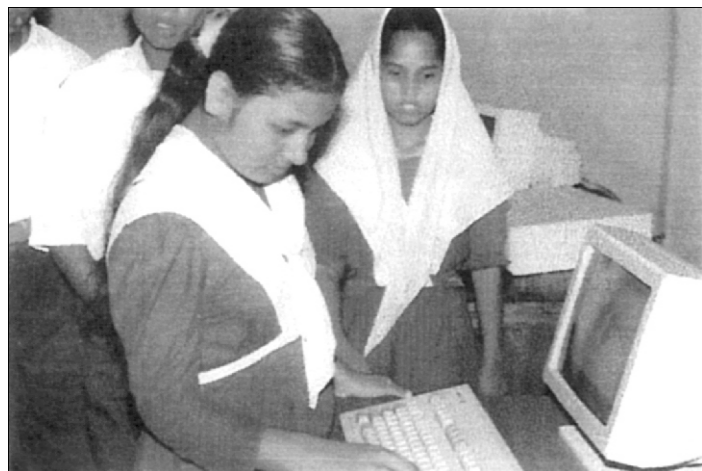
After the expected round of speeches, we were invited by the school authorities to see for ourselves the science fair that had been organised for the occasion. I was surprised to see computer-learning being carried on with the help of make-shift arrangements in this rural atmosphere. Quite a few students also demonstrated their abilities in the electrical class, in poultry farming and in horticulture. Teachers introduced me to some students from the senior classes who were

already earning money through their own efforts with the skills they had acquired in the school. These students very happily mentioned that they were now supplementing their family-income.

The chairman of the committee also informed us that (with the help of his friends in Dhaka) the school had been able to arrange in the recent past eye-clinics for the local villagers and that the students had acted as volunteers during the medical activities. Two such volunteers (girls), who are about to pass out of the school, informed me that they would eventually like to become doctors and if that was not possible (due to scarcity of funds), then they would try to be nurses. They also added that subsequently they would like to remain in their villages to help the rural poor. One does not know if their ambitions will come true, but the very fact that in rural Bangla-

faith. It was encouraging to attend the annual prize distribution ceremony and see meritorious students receive prize bonds (obtained through voluntary donations) for having successfully competed in the SSC examinations on the Division level and having obtained excellent marks. There were many proud faces looking forward to higher education in Dhaka. I also met students who while in school were already earning supplementary income for their families. It was also a matter of happiness to meet young girls who were confident enough in this rural backwater to participate in PT and Callisthenics with boys just as other children do in urban areas. This was for me a giant step away from blind prejudice. I shook hands with hope.

Velayet Hossain Bahumukhi Uchcha Bidyalay demonstrated that quality education in Bangladesh need not be available only to the chil-



Students at computer class

tion which was taking place in a few days. I agreed to go. I am happy I did.

It took us about two and half hours by car to reach Nallapara. Eleven others went with us. The group included former Chief Justice Kemaluddin Hossain, eminent economist Professor Rahman Sobhan and Dr Anwar Hossain, the former

only nearly six acres of their inherited ancestral property but also large chunks of their savings.

Like any other new idea, the management committee of the school initially faced problems but they were able to overcome them. Some of the guardians who had come to attend the annual function pointed out to me that initially they had been



P. T. and callisthenics



Students at electrical class (housewiring/motor winding etc.)

desh this is taking place, gives one hope.

The school authorities also took us to see for ourselves the areas of practical training within the school premises. The teachers informed us that the agricultural trade courses are currently being run in nearby private farms. We also saw the nursery and stocking ponds which had been excavated near the school to teach students interested in the fisheries sector.

The teachers assured me that the school library was expanding slowly and efforts were being made to obtain periodicals and books from different sources both within Bangladesh and abroad. Given the enthusiasm, I am sure the school will be able to obtain the requisite resources for this purpose in the near future.

I left the school at the end of the day with renewed optimism and

dren of the middle class in Dhaka and in urban areas. It was proof that it can be provided also at the village level to the sons and daughters of the rural poor. The school is an example of not only how the human capacities of the poor can be developed through local efforts but also how their opportunities can be enhanced to graduate their families out of poverty without migrating to the cities.

All of us who had undertaken the trip agreed that the concept of this school should be replicated if possible at the grassroots level in the different districts of Bangladesh. This was a success story about local efforts being juxtaposed with minimal resources for achieving the desired objective.

Muhammad Zamir is a former Secretary and Ambassador.

## Space shuttle Columbia: Some reminiscences

BADIUL ALAM MAJUMDAR

ON February 1, 2003, America's space shuttle Columbia disintegrated 200,000 feet above the Earth surface while flying back home at 18 times the speed of sound. It was only 16 minutes away from landing at Cape Canaveral in Florida. This was Columbia's 28th flight since it flew into space first time 22 years ago. During this period, it made many histories -- histories of both triumph and tragedy. I had the rare privilege of being witness to some of them.

Columbia made history by being the first shuttle orbiter to fly into space on April 12, 1981. It was also the first space vehicle to crash during landing in 42 years of America's manned space flight. In between, it made many other minor, troublesome histories, including of long delays and costly repairs.

The space shuttle programme itself had a controversial origin. Vis-a-vis a challenge from the Soviet Union, the 1960s were hey days of America's space programme. President Kennedy's visionary statement before the joint session of the US Congress in 1961 truly ushered in a boom period for space exploration. He declared: "I believe this nation should commit itself to achieving this goal, before this decade is out, of landing a man in the Moon and returning him safely to Earth. No single space project in this period will be more impressive to mankind, or more important in the long-range exploration of space, and none will be so difficult and expensive to accomplish." The Apollo programme was thus born, and three Americans for the first time landed on the Moon in 1967.

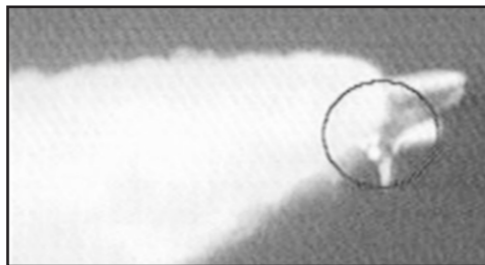
While the American space industry worked on Moon landing, the

space dreamers talked about living in orbiting space colonies or building anti-gravity machines or crossing the galaxy in a particle-scooping contraption called a ramjet. NASA itself in the early 1960s made preliminary plans for manned expeditions to Mars -- a truly daring mission offering the most daunting technological challenges. It also had other ambitious plans -- for large space stations, lunar bases, and nuclear interplanetary rocket stages.

However, faced with significant budget cuts in 1971, NASA shelved the lunar missions and other ambitious projects. Manned mission to the Mars, representing exploration of space purely for the sake of science, was also abandoned. In stead a technologically -- relatively speaking -- "safer," less expensive and commercially attractive option was taken by NASA. The option taken was to develop reusable spaceship, as opposed to throwaway rockets, to be called Space Shuttle.

The idea was to develop a fleet of Space Shuttle suitable for low Earth orbit -- couple of hundred miles off the Earth's surface. The vehicles would be used to launch commercial and military satellites, retrieving and servicing them, and carrying out scientific and commercial experiments. It was a controversial decision in that many in the scientific community thought that NASA, an agency known for its imaginative programmes and mind-boggling initiatives, sold out to the commercial and military interests and abandoned its mission of expanding the frontiers of science through space explorations. Developing the Space Shuttle was not thus one of NASA's most popular decisions.

This writer then a young Assistant Professor of Economics and Finance at Seattle University -- was brought in by NASA in 1980 to work on the commercial potential of the Space Shuttle programme. I worked with a team on what was called the "Space Industrialisation Project," a project conceived with a vision of setting up in the future industrial



Ill-fated Columbia disintegrating in flames

ventures in space.

The attractiveness of space manufacturing is that anything one wishes to make in a microgravity environment of outer space would turn out perfect. The product thus made would be free of the effects of Earth's gravity and impurities of the Earth surface. Needless to say that space manufacturing was meant for low volume and high value products, requiring perfection. Micro-electronics, particularly crystal growth, and pharmaceuticals were the two best candidates for such manufacturing.

Our team developed an institutional arrangement called "Joint Endeavour Agreement" (JEA). The idea behind the mechanism was that private industry would design and carry out its own experiments for space manufacturing and NASA would provide transportation services to space using its Space Shuttle. In this way, there would be no transfer of funds between the

government and the private sector. The difficulty with such transfers was that under the prevailing government procurement regulations, if the government invested any money in a venture, all the data rights and patents developed out of that venture, belonged to the government. The JEA was developed to surmount this problem and initially to use Columbia's services as it was the only Space Shuttle in operation for the first five flights.

The idea of space manufacturing created great deal of enthusiasm and many agreements were quickly signed. Quite a few experiments were also carried out during the first five years. Unfortunately, the programme suffered a setback after the disaster of the Space Shuttle Challenger in 1986.

The 1970s were not the best time for NASA. Many people were frustrated that the agency abandoned its main mission of space exploration in order to operate a "shuttle service." Then the Shuttle programme itself was not going well -- it was beset with many nightmarish technical problems. One problem that turned out to be the biggest technical challenge was how to protect the vehicle from the 3,000 degrees Fahrenheit heat to be generated during the Shuttle's reentry to the Earth atmosphere. After spending much time and money a type of special, heat-shielding tiles were developed to deal with the problem. This caused long delays and large cost overrun in the development of the Space Shuttle. For example, the planned first flight of the Shuttle had to be shifted from 1978 to 1981 and the project cost increased from the

projected \$5.15 billion to actual \$6.744 billion. This shattered the image of NASA and it lost important political support. The agency was also subjected to much ridicule. Many Americans felt that it lost its "magic touch."

In the middle of much public derision and doubts, came the day of Columbia's maiden flight at the beginning of 1981. All of us gathered at NASA Headquarters to watch the historic launching on a giant screen. There were great excitements. Everyone expected that the agency would be able to redeem itself with a picture-perfect flight. Unfortunately that did not happen -- the launch was aborted right before the countdown began because of a computer glitch. I still vividly remember the dejected mood and deflated spirit of everyone gathered. Needless to say that this only deepened the doubts about NASA although Columbia flew off to space on its next scheduled date -- April 12, 1981 -- without a hitch.

To conclude, the destruction of Columbia and the loss of seven lives represent a major tragic event. Everyone -- irrespective of race, religion and nationality -- is saddened by it. However, this tragedy also offers an opportunity for NASA to redefine its mission and reassess its priorities. One option may be to transfer the operation of the Space Shuttle to provide transportation services to space to private sector and focus its own attention to intergalactic expeditions for the sake of science. I hope the agency will show boldness and imagination in its decision, for the glory -- and the future for that matter -- belongs to the brave.

Dr Badiul Alam Majumdar is Country Director, the Hunger Project-Bangladesh