

Science is the Answer

by Zeba I Seraj

Students from Bangladesh go for their PhD abroad to any laboratory that offers them a place and a scholarship. They then work on a problem of the host country's choice. In 95 per cent of such cases the problem has no relevance or is 'too high-tech' for Bangladesh. When such students come back (if they at all do so), they are at a loss to know how they can apply their training to do research here. In most cases, therefore, foreign-trained post-PhDs end up doing nothing.

universities and research institutes. In this way students can pursue M Sc, M Phil and Ph D degrees in the country without having to worry about how to feed themselves while studying for such degrees. Such posts are common the world over. Collaborative projects between university research institutes and laboratories in more developed countries should also be established. Short-term training and exchange programme between the collaborating institutions would go a long way in addressing some of the major problems of our country and scientific solutions to these problems sought. Supervisors heading such projects should be given allowances for the extra time and effort they will need to put in. Many students interested in pursuing higher degrees in our country now know that Ph.D studentships by donor agencies have been drastically reduced due to high investment costs and also the problem of students staying back in the host country.

However, many agencies still give partial or dissertation fellowships enabling the student to complete part of the work abroad. This ensures that the originating country gives funds for the local needs of the student pursuing the higher degree. The student manages to do quality work at the same time

science and technology, agricultural research stations, extension workers and even farmers. We have heard of a student who engineered nearly spoil-free tomato released in the US-markets last year. India is not far behind — it is now working on genetically engineered pest and disease-free crops. These advances were brought about by the close cooperation between agriculturists who knew the properties of the crops in question and the molecular biologists at the universities who looked at the problem from the molecular level.

In our country, however, the agriculturists are still of the opinion that crops are their sole preserve and university scientists should not be allowed to work in their field. For example, in order to bar M Sc students having training in Biochemistry, Botany and Molecular Biology from competing in jobs advertised at BRRI (Bangladesh Rice Research Institute), earlier this year, agricultural graduates have filed a case in the court. Then IPSA, the Institute for Post-Graduate Studies in Agriculture, will only register agricultural graduates for Ph.D but not a university graduate trained in a relevant or highly appropriate field. What really needs to be done is for ministries like the Agriculture, Health, Jute, Science and Technology and Indus-

first need to study implementation of such projects in India and other developing countries before money can be sanctioned for an institute of biotechnology in the country. Back to square one! It may also be mentioned here that the feasibility project has started out with just such a study!

Research Institutes in the country: Talking about Institutes like the BCSIR and others. Being government institutes, their functioning processes are too bureaucratic for research to be smoothly carried out. Research needs commitment, dedication, perseverance and also incentive. Can anybody cite an example where research can be carried out in a 8-2:30 office schedule? These things in themselves defeat the purpose of research. I have several former students working at the BCSIR. The organisation of the institute is not conducive to research. For example, in order to obtain chemical supplies by a scientific officer from the centre's store, counter signatures of 2-3 senior staff members are required. Practically, however it has been observed that at least one of these seniors are usually unavailable at any one time — busy in a meeting, gone to the next laboratory, out for lunch etc. which means that if the scientist in question should need anything from the store in the middle of his exper-

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and that he/she also works on a problem of relevance to his/her country. This concept follows the idea of 'matching money'. Donor countries are willing to help, but only we are willing to help ourselves first by putting in equal investment of time, money and effort. These fellowships are not being utilised since the matching money to support the student locally is not available. This concept has also not gained popularity among the best students because the Ph.D degree is local and in their mind does not have equal quality to foreign Ph.Ds. It is up to us to convince students, otherwise however money for their local support needs to be found first and perhaps other incentives given.

The advancement of biotechnology in India: Taking the case of the advancement of biotechnology in India, the government opened a department of biotechnology more than 10 years back which was given the rank and status of a full Ministry. The function of this Ministry was to coordinate research among existing institutions, prioritise research, establish links within and abroad for strengthening research and fund high priority research areas. This department has done a magnificent job in coordinating research and establishing linkage projects among Indian universities, agricultural research institutes, institutes of

tries to put their heads together and work jointly to identify and implement projects of national importance. They then will need to establish links between academic and other research organisations so that the problems can be addressed to and solved in a concerted and focused manner.

In this connection, I would like to mention how far behind we are despite having had the opportunity to advance the cause of science and in particular, biotechnology, a little bit. In 1992, a Feasibility Study for the Establishment of a Biotechnology Institute was undertaken by the Division of Science and Technology under the Ministry of Education. The foreign expert involved is an eminent scientist with experience of establishing biotechnology institutes in a number of countries. Local experts involved were also well known scientists. The report had a strong agricultural bias, which was understandable since our country has much to gain in biotechnological advancement related to agriculture.

However since the project was initiated by the Ministry of Science and Technology and not Agriculture, a strong lobby against the whole project was initiated, presumably by the agriculturists. The project proposal was eventually dropped from the files of the ERD with the recommendation that "we

ment, his day is doomed. One foreign scientist while visiting a similar institute, was surprised when local scientists had to keep opening locks to the various laboratory spaces. The local scientists claimed that everything had to be kept secure in case of theft. The foreign scientist had later remarked: "I have never before heard the need for lab ware and apparatus to be kept under lock and key. We are more afraid of our ideas being stolen! Here, one, of course, has to add that in order that the scientist works hard he/she needs to be given incentive on the one hand and held accountable on the other, if a working system is to be devised."

Research at the Universities: The atmosphere the universities is also not conducive to research work. There are no funds and no incentive for research work. Furthermore, the government procedures for purchase and import of equipment and chemicals are complicated. Doing research is simply tantamount to inviting hassle. Instead of spending challenging hours on the lab bench, one is obliged to spend considerable time at airports, university administrative offices or government tax offices! Reference to this problem was made in Dr's column, "Crippling of Scientists" 30th October, 1996. Even recently I spent the whole day at the airport trying to release a perishable consignment of bio-

What Purpose Does University Education Serve

by AH Lutful Hassan

UNIVERSITIES being the obvious community resources for investigation of the links between technology and education, they promote a balance between the new knowledge and the old. Intelligence, ability to use tools, to exercise foresight, to create and communicate are the marks of human uniqueness. Only one institute is charged with the responsibility of developing intellectual capability and that is the university. Thus maintenance of universities is a crucially important task for any country (or society). The importance of university as a producer, guardian and disseminator of intellect that enhances the possibilities of civilization must not be undermined, under any circumstance.

Universities are called temples of learning, where thoughts of a nation are born and fostered. However, all universities have a common pattern and outlook. They are dedicated to common causes. Their mission being devotion to knowledge and search for it, they are indifferent to any motive except the pursuit of truth. The condition for their existence is thus absolute freedom to follow where the argument leads.

But what we observe in the universities of our country? We like to have such atmosphere in our universities as in compatibility and uncertainty sustaining throughout the year? We have come across 25 years of independence — but till date we could not manage to formulate a standard and effective education policy. Definitely this is a shame for us. Due to the nasty political violence, hundreds of students lost their lives since liberation in 1971. It is a matter of great regret that some teachers, even VCs of some universities had

been actively involved with politics on the campus. Due to unhealthy politics on the university campus the lives of innocent students always remain at risk not to speak of their academic life being at utter jeopardy. As a result, session jam and year loss are common to university students. This kind of precedence cannot be found in any other country. During my student life (1982-1988) I found Dhaka University remaining closed for violent student politics continuously for five months (in 1983). This was the longest vacation (without any reason) that the Dhaka University students had. If we look at the Chittagong, Rajshahi, Mymensingh, Khulna, Sylhet, Islamic University etc. we may observe the same picture with only little variations.

Is it because the universities belongs to the Government? In truest sense, the educational atmosphere and standard (except BUET) in all public universities have become questionable? In fact we found Dhaka University being called the Oxford of the East in so many books. That is history now. To build up a better future for tomorrow's citizens our Government should chalk out a policy now. We don't have plenty of time in hand to waste. If we cannot do that, the future generation will simply not forgive us.

The tasks and responsibilities of university is indeed boundless. These include educating the youth for tomorrow to be leaders of the state and in the esteemed professions, and to be pioneers in the fields of culture and civilization. This sense of responsibility must underlie the approaches to problems of university administration and education. In the first place, the main responsibility lies with the provision of qualified teaching staff and adequate accommodation and arrangements and also in developing the requisite environment and atmosphere in which intellectual curiosity can be fostered and appropriate education imparted.

On the other hand, the next important responsibility lies with the students themselves. The finest teaching, the largest libraries and the most modern laboratories will not educate a student who refuses to develop intellectual curiosity, and who is not so willing to utilise the opportunities so offered. The university itself cannot do much to instill this sense of personal responsibility in the minds of the students, as it is essentially the part of home and social environment.

It has to be recognized that education is a slow process of development of individual intellect and personality. But a sure process. What should be a gradual process and exercise in self-development and self-discipline has, with many of our students, even teachers, really turned into a matter of how soon and short they can take the final leap without going through the long courses. Most of the students come to university, for one purpose — namely, to obtain a certificate as a passport to social prestige and profitable occupation. Thus, they estimate the value of higher education by the two touch-stones — examination and career. So most of the students and their guardians are only anxious that they pass from one class to another, and enter the university for a degree without any regard for achieving the required standard (of knowledge). The functions of university are manifold. It has to rediscover the acquisitions of the past and make them the basis for future progress. It has to bring together all that human effort has done throughout the world and add to it the contribution of the university itself. With the advancement of civilization, the boundaries of human knowledge are being enlarged day by day, and it is the duty of every university to lend a helping hand in the continuation of the process. The university as a great house of learning should bring together all the greatest achievements of arts and sciences in its process of imparting knowledge. To bring conformity with and in the laws of society, the touch of education is essential. And universities are no longer organizations isolated from the general life of the nation. For the healthy growth of any community, wisely developed universities are essential. The purpose of education is and must be the overall development of human resources. Life today is very complicated indeed, and, therefore, the preparation for it also must be as comprehensive as possible. But our society as well as universities are lagging much behind in these respects. For obvious reasons, of course.

We must formulate our education from the practical standpoint. It is regardless to say that inadequate access to the modern educational system and our lack of familiarity with that appear to be the major reasons for the poor standard of education in Bangladesh. If we really talk about development we must formulate a policy from practical stand-points. No hypothetical assumptions should be taken into consideration. Actually, in democratic culture, economic development, social welfare and national growth are closely linked to the planned investment in education.

As a disseminator of knowledge, a university has to adapt and adopt itself to its environmental necessity and needs of the time. In fact, university education develops the physical, mental, moral and spiritual faculties latent in young men and women, and fosters the cardinal virtues of sincerity, inner poise and harmony so as to make every individual a complete model of a human in society.

It is hardly necessary to emphasize the fact that passing the university examination obtaining degree is not the end of acquiring knowledge but the beginning of it. The degree required by students at the university may not carry them far. The university degree only implies that the mind of its holder has been through proper discipline and has become sufficiently (adequately) developed and elastic to face and grapple all situations, expected or unexpected, to master facts and thus work efficiently in all circumstances. A man who has learned to think clearly and reason cogently, to sift and weight what is put before him, to co-relate his bit of knowledge with others' and with life as a whole — can be called an educated man. Actually this is the ideal of education; and should be possessed by students in their passage through universities. And our universities must be such places, both education and atmosphere wise, for the youth to be so equipped and prepared for the future.

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chemicals, which were transported in dry ice (-20°C). I had to explain to at least 2 dozen officials that dry ice is not the same as ordinary ice (-20°C as against 0°C) and once the dry ice (solid carbon dioxide) evaporates the reagents would spoil. This time I did not leave it to the clearing agent — I went myself to ensure delivery within one day. The unusual sight of a lady university teacher in a customs office allowed us to jump the queue at more than 20 tables the files had to be placed at! And all this hassle because the government chooses to tax import of chemicals meant for research purpose only!

Science education at schools and colleges: Coming to science education at the SSC and HSC levels. We have turned science into a mundane, uninteresting jumble of facts that our students are forced to learn by heart, reproduce at exams, then conveniently forget. Has any one really looked at the books our Boards are producing for our children and compare it to Indian or Western books? For students around the world, science is absorbing, challenging and fun. Apart from interesting books, where the emphasis is not on rote memory but on encouraging the child to discover things for themselves, children are made to do projects which make the children think, adapt and engineer.

In our country, science means memorising and going to tutors to get suggestions for further memorising. We have to make science interesting for our children. Point out science around them. Set problems of daily life which they should find answers to. In short get them into the habit of exercising their brains. We will then only just begin to change our future.

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No EXCUSE... Dismantling shanties and relocation do not solve squattling problems. Manila's "Smoky Mountain Project" is a workable alternative: low-cost tenement dwellings, space for industry and educational development. People can continue to work. DEPTHnews

The Daily Star Entertainment Guide. Monday 30th December. (All programmes are in local time. There may be changes in the programmes.) BTVC, CHANNEL V, STAR SPORTS, ZEE TV, DD 7, SONY ET, PTV, STAR MOVIES, TOM AND JERRY, JAMES BOND, ZEE CINEMA.