In science and technology we trust

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Both industrial and post-industrial economic development has properties dominated by services, information, and research. In other words, the economy is based on knowledge and modern technologies, including information and communication technologies (ICT).

In this regard, two recent heartening events may be worth mentioning. First, on September 19, 2011, Prime Minister Sheikh Hasina was awarded the South-South Award for her government's substantial contribution towards improving the state of women and children. Secretary General of the International Telecommunication Union, Hammamou Toure handed over the award to Sheikh Hasina at the Waldorf Astoria Hotel, New York, saying "she was selected for the award for her innovative idea to use the information and communication technology for progress of the health of women and children." Last year, the Hon'ble Prime Minister also received the UN MDG Award 2010, for her outstanding contribution to improving the child health situation in the country.

Second, on October 2, 2011, the Parliamentary Standing Committee on the Ministry of Science and ICT approved the Science and Technology Development Trust Bill 2011. The salient features of the Bill include:

- The Trust will take steps for promotion of scientific education and expansion of
scientific knowledge.

n The Trust will provide financial support to deserving young scientists, researchers, technologists, and academics.

n The Trust has provision for supporting educational institutions of secondary and higher secondary level for development scientific education.

Against the two pieces of encouraging news, are two other related news items that indicate the present reality and future state of secondary-level science education and technological development.

The first news item with the title being "During the Last Eight Years Science Students at Secondary Level Has Declined by 33per cent" appeared in in a national Bengali daily on August 21, 2011. The gist of the news is that in 2001, the number of students with science majors appearing for SSC Exam was 264,100. In 2010, the number of science majors examinee for the same exam has declined to 176,880-a net decline of 33% or one-third of the students. The reasons for this decline are:

n About 65% students complained about lack of adequate supply of qualified and motivated science teachers.

n Students who study science subjects at school desperately need help from experienced private tutors at home for their test preparation

n A large majority of science students come from better-off families who can afford private tutors for their children. This is a case which, Paulo Freire afford has observed, is 'learning and social difference'.

During almost the same period (2000-2007), the number of madrasa students increased nearly doubled-form 79,376 to 143,576. This is a painfully fine point on the dark future of the country. A large majority of the academics, intellectuals, and progressive citizens are severely dismayed with the facts. They strongly believe that the government should not have squandered away the limited resources for patronizing madrasas' inferior education, while schools, colleges, and universities provide quality religious education. Some others say in democracy middle ground is the best policy for the administration and the country. In the contemporary world, religion is increasingly an important force in both personal and public life. In Bangladesh it has been a point of reference for people of all walks of life. It may not be wise for the present government to take a rigid stand in the preserve of sacred-secular encounter.

However, a noted study (World Bank: 2009) shows that madrasa education is inferior to two other types of education: a high quality English medium education and better quality main stream Bengali medium secular education. The study indicates that madrasa education does promote skills that are incompatible with modern economy, and they do not promote civic values that are essential for a functioning democracy. The good news is, the study concludes, that secondary level madrasa students constitutes less than 10% of total students and quality of education in madrasa system is gradually being modernized, despite steep resistance from conservative Islamists who use the institution as the instrument of partisan politics. Nevertheless, the absolute decline of science students is, indeed, frustrating that calls for immediate attention of the Government and its Directorate of Secondary and Higher Education. Bangladesh needs more qualified science teachers.

The second news item appeared in a national English daily on August 21, 2011. In an inauguration meeting, Prime Minister Sheikh Hasina mentioned with emphasis that "the government is underscoring diversification in the education for time-befitting, job-oriented, and science-based education for all." These three phrases (in italics) are also-in substance and style-embodied in the
Education Committee Report 2010. The policy outcome of her government to that effect is appraised below.

The government has successfully addressed the issues of i) free distribution of school textbooks across the country and computers in major regional schools; ii) national curriculum update; iii) making the teacher to student ratio better; and iv) introducing free lunch in schools. The government has a plan to provide more science teachers with at least one computer teacher in every school and to provide each school with a few laptops, multi-media projector, other equipment, and technicians.

The government has attempted to minimize the quality difference between three types of educational institutions with particular attention to the development of madrasa education. Its curriculum map is being changed with more content of Math, English, and Science. The courses on ICT, health, and environment will eventually be introduced.

The unregistered-and therefore unregulated-private madrasas, including the Quomi-type madrasas are now being brought under government control so that they cannot escape a measure of moral and national responsibilities. Against this background, the government has introduced i) the fiscal incentives to traditional, unregistered, all-male madrasas to get registered; and ii) another financial incentive to admitting female students.

Now let us come back to our foregoing discussion about the use of the ICT-by using digital technology-for progress of the health of women and children.

While Bangladesh has introduced digital information technology (DIT) in the early years of this century, the present government-under the visionary leadership of Prime Minister Sheikh Hasina-has made a journey with the DIT system. The government has chosen to introduce DIT-as a thrust sector-in several spheres of national development, including public administration, public health of men, women and children, and measures against climate change.

Sajeeb Wajed Joy, a computer scientist and the brain behind the Digital Bangladesh Project once said: "The present government is committed to take the advantage of digital technology to the door step of every one." He is a son of the Prime Minister and a graduate from UT Arlington and Harvard. He seems to suggest that the government means business when it comes to the digital future of Bangladesh. Some of the achievements made so far in the health sector include:

Reduction of infant mortality rate; increase in women's life expectancy; higher vaccination rate of children under five years; wider coverage of Vitamin A supplement feeding; more pre-natal check-up by trained nurses; and expanded maternal health voucher schemes for poor pregnant women.

The establishment of Health Information Centers with community clinic facilities in 4,500 unions, in addition to 11,000 Health Clinics with each one is serving for 6,000 people, especially for mothers and children.

We draw three conclusions from the above discussion. First, the government does consider science the most reliable source of knowledge, and technology a key to the prosperity of our nation. There is nothing else from which one can logically derive the property of knowledge and bring about economic development and social change. Second, while appreciating that madrasa is an essential part of the fabric of Muslim society, it should be regulated and modernized. Prime Minister Sheikh Hasina is known as a pious Muslim lady, but she does not see Islam as a monolithic doctrine. So, the introduction of science and secular subjects in Madrasas is rightly thought to reduce the negative image and quality gap that are associated with this outdated, rote-learning type of education. Third, the government is committed to make the Digital Bangladesh
Project a total success. However, this is just the beginning. To truly blossom, there needs to be more coordination and rigorous efforts between the departments of Science & Technology, Secondary & Higher Education, and Public Health.

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