

ICT EDUCATION CASE STUDY

**ASPBAE RESEARCH ON INFORMATION AND
COMMUNICATION TECHNOLOGY**

(BANGLADESH)

By Mohammad Ali, Dhaka Ahsania Mission

2003



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The challenge Bangladesh faces is how to become a learning society and to ensure that its citizens are equipped with the knowledge, skills and qualifications on information and communication technology (ICT) they will need in the next century. ICT revolution imposes particular challenges on education systems in Bangladesh. These challenges reduce to three broad areas. The first has to do with participation in the information society, the second considers how ICT impacts on access, cost effectiveness and quality of education, while the third is to do with the way that ICT changes the education process. However, ICT is contributing to ever-increasing inequalities in Bangladesh through the so-called “digital divide” that splits the Bangladesh between those who are “ICT-literate” and the majority who are not and most of the women have no access to a computer and the Internet. A series of factors, including literacy and education, language, time, cost, geographical location of facilities, social and cultural norms, and women's computer and information search and dissemination skills constrain women's access to information technology.

Dhaka Ahsania Mission is playing a vital role to provide computer and Internet facility in the rural areas shorten “digital divide” and create opportunities for addressing and eliminating poverty and hunger through education and technological intervention. According to this mission and vision, Dhaka Ahsania Mission has established Ahsanullah Institute of Information and Communication Technology (AICT), Ahsanullah University of Science & Technology (AUST), Institute of Literacy and Adult Education (ILAE), Non-Formal Basic Education, Continuing Education Program, ICT Ganokendra (a community learning center that has access to the computer and internet) etc. Dhaka Ahsania Mission is trying to establish a relationship between Ganokendra and Bangladesh Open University (a governmental institution for distance education) so that poor rural people get distance and adult education.

However, it needs to be realised that information and communication technologies by itself cannot be an answer and elixir to all problems facing Bangladesh but it does bring new information resources and can open new communication channels for the rural communities. It offers new approaches for bridging the information gaps through interaction and dialogue, building new alliances, inter-personal networks, and cross-sectoral links between organizations. The benefits include increased efficiency in allocation of resources for development work, less duplication of activities, reduced communication costs and global access to information and human resources.



Country background

Bangladesh, one of the most densely populated countries in the world, extends over an area of 147,570 sq km with a population of around 130 million, half of which are women. It has the Bay of Bengal on the southern side, and borders India and Myanmar. About 85 per cent of the land, except some hilly regions in the eastern side, is low-lying, criss-crossed by a number of large rivers and their tributaries. During the torrential monsoon rains, most areas are flooded.

Country profile

Name of the country	: People's Republic of Bangladesh
Geographical Location	: 20° 34' – 26° 33' North; 88°01' - 92° 41' East
Time	: GMT +6
Capital City	: Dhaka (population 10 million)
Language	: Official language: Bengali. Second language: English
Unit of Currency	: Taka (1 US\$ = Tk. 59.00)
GDP	: GDP 1999-2000: US\$ 47513 million (Previous year- US\$ 44034 million). Real GDP growth (est) 1999-2000: 5.5%
Electricity	: Average 11.5 billion kWh/year (1998)
Export	: \$4.4 billion from industry (1997-1998)
Population growth rate	: 1.56 per cent
Religion	: Muslims 88.3 per cent, Hindus (10.5 per cent), Buddhist (0.6 per cent), Christian (0.3 per cent), animists and believers in tribal faiths (0.3 per cent)
Mineral resources	: Natural gas, limestone, hard rock, coal, lignite, silica sand, white clay, radioactive sand etc. (There is immense possibility of discovery of oil deposits)
Human resource	: A substantial number of physicians, economists, accountants, IT personnel, administrative and managerial personnel. An abundance of easily trainable and adaptable hard-working, intelligent and youthful labour force is available.
Form of government	: The country has a parliamentary form of government headed by the prime minister. The president is the constitutional head of state.
Principal Industries	: Jute, tea, textiles, garments, paper, newsprint, fertiliser, leather and leather goods, sugar, cement, fish processing, pharmaceuticals, chemicals, light engineering, ceramics, information technology etc.
Airports	: Dhaka, Chittagong, Jessore, Iswardi, Sylhet, Comilla,



: Cox's Bazar, Thakurgaon, Rajshahi, Barisal, and Saidpur

Sea Ports : Chittagong and Mongla

Bangladesh is poor, with an annual per capita income for a population of about 130 million at approximately \$350 US (US State Department statistics). The population is young, children below the age of 15 representing about 45 per cent of the total population, with roughly equal proportions of males and females (Economic and Social Commission for Asia and the Pacific [ESCAP]).

Bangladesh has a highly patriarchal society. In households and through local and legal decision-making bodies, men exercise control over women's labour, their choice of marriage partner, their access to labour and other markets, and their income and assets.

Bangladesh faces the challenge of becoming a learning society, and ensuring that its citizens are equipped with knowledge of ICT, skills and qualifications they will need in this century. Application of computers in industry, business, communication, and education and in every other sphere of life demands the extensive introduction of computer education from primary to post-graduate level, and career-oriented professional ICT training provided by NGOs like the Dhaka Ahsania Mission or a training centre like Bangladesh Computer Council.

Formal education in computers was first started in 1984 with the foundation of Computer Science and Engineering Department in Bangladesh University of Engineering and Technology. ICT education thereafter gradually extended to the bachelor's degree, higher secondary and secondary school levels. In Bangladesh, there are about 83,796 primary level institutions, 5,694 and 15,748 junior and secondary level institutions respectively, 2,339 higher secondary and degree colleges and more than 1,000 ICT training centres.

This section describes the introduction and status of ICT education in primary and junior secondary, secondary and higher secondary, diploma, undergraduate and post-graduate levels, and career-oriented professional ICT training.

Primary and junior secondary level

The first five years and the next three years of education constitute the primary and junior secondary levels respectively. Bengali and English languages, history, geography, general science, mathematics and religion are the major subjects taught at these levels. Students become, in a very small way, aware of computers and their vast applications through their general science textbooks.

Recently, the government formulated a National Education Policy in the cabinet, which was endorsed by Parliament. In this Policy, introduction of ICT education at the primary and junior secondary level has not been included in the implementation period of 2010. A majority of schools in the country cannot afford to buy computers for their students. Though a small number of city-based schools have very limited computer laboratory facilities, yet they fail to make their students familiar with internet, e-mail and related



technology because of the lack of nationwide telecommunication infrastructure and internet facilities. In addition, school teachers at these levels lack the minimum level of training on IT.

Secondary and higher secondary levels

The 9th and 10th years of a school-going student and the next two years of a college-going student constitute the secondary and higher secondary levels respectively. Computer science was introduced as an optional subject for secondary level students from the beginning of 1994, and about 150 schools were permitted to start up the subject. Many more schools have shown interest, and the quantitative expansion of ICT education at the secondary level is phenomenal. The National Education Policy has recommended compulsory computer courses from the secondary level of education. The Board of Intermediate and Secondary Education, Dhaka introduced computer science as an optional subject in 1991. Already, more than 200 colleges have introduced computer science as an optional subject for science stream students.

Moreover, about 30 polytechnic institutes of the country (mostly located in Dhaka) are offering four-year diploma courses for those who have graduated from SSC in computer technology. Bangladesh Open University is now offering three-semester diplomas in computer applications.

Undergraduate and post-graduate levels

At the moment Bangladesh has more than 8 public and 20 private universities, 4 BITs and some national university-affiliated post-graduate institutes and colleges, which are offering courses related to computer science and information technology.

Bangladesh Open University is the only university in Bangladesh that is offering Distance Education. Established in 1992 by an act of Parliament, it has opened up new vistas in distance education in the country. Situated at a picturesque site of Gazipur, 30 km north of Dhaka, BOU has a printing and production division and a modern media centre. Construction of these organisational structures is almost complete, with financial assistance from ADB and the government of Bangladesh. BOU's programmes are aimed at everyone, particularly working people and women and those socially disadvantaged.

Bangladesh Open University relies heavily on print materials, electronic media like radio-television and audio-video cassettes, tutorial services, computer networking and the internet. The use of these techniques helps BOU to take its academic programs to the doorsteps of people far and wide. It makes room for in-house education.

Some other institutions have also initiated research programmes in IT-related fields. These include machine learning, pattern recognition, speech recognition, automatic translation, computational algorithm, VLSI and 3-D vision. Considerable research work



has been done in the use of Bengali in computers. Unfortunately, like R&D in other fields of science and technology, there is very little interaction between academia and industry.

Gender differentials in socio-economic status: a statistical summary

Economic Status

	Male	Female
Refined activity rate (excluding housework)	85.3%	63.4%
Share of employment in Agricultural activity	49.0%	51.0%
Share of employment in non-agricultural activity	85.0%	15.0%
Proportion of paid workers earning >300 Taka/week	61.7%	19.0%
Average monthly income (Taka) of household by gender of head	2909	1892
Proportion of households in extreme poverty by gender of head	27.7%	32.6%
Share of unpaid family labor	25.6%	74.4%
Proportion of employed in profs, technical, admin. and managerial employment	4.3%	1.6%

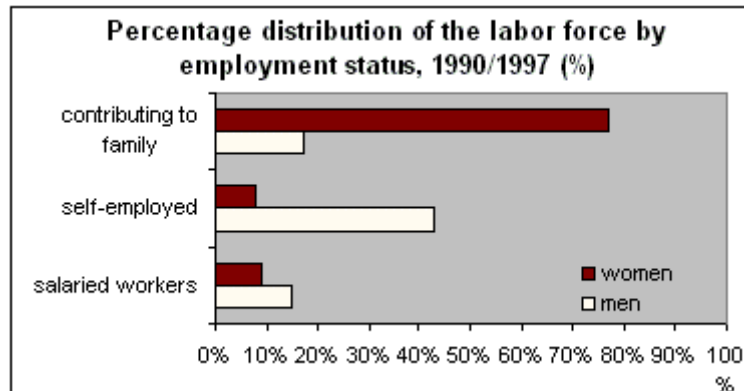
Social Status

	Male	Female
Literacy rate	47.1%	22.0%
Gross enrolment ratio at primary level	83%	71%
Gross enrolment ratio at secondary level	25%	12%
Gross enrolment ratio at tertiary level	5.9%	1.3%
Child death rate (per 1000 population)	12.3	14.7

Status of women in the work environment

In 1990/1997, percentage distribution of the labor by status of employment was indicating a gender-biased situation where the contribution of women was essentially family-oriented. The proportion of administrative and managerial positions held by women has increased from 1 per cent to 2 per cent between the mid-1980s and the mid-1990s; however, in spite of this increase, the number of women is still very low.





Source: UN report The World's Women

Women & ICT

Getting reliable statistics on women's use of ICT in Bangladesh is very difficult. However, it is clear that the numbers are small. Most women in Bangladesh who use information technology use it at work. Except in upper-income enclaves, access to a computer or the internet at home is not a typical phenomenon. A series of factors including literacy and education, language, time, cost, geographical location of facilities, social and cultural norms, and women's computer and information search and dissemination skills constrain women's access to information technology.

Information technology can offer significant opportunities for virtually all girls and women in Bangladesh, including poor women living in rural areas. However, their ability to take advantage of these opportunities is contingent upon encouraging policies, an enabling environment to extend communications infrastructure to where women live, and increased educational levels.

Adult education and people's empowerment

The information and communication technology (ICT) revolution brings particular challenges to education systems around the world. These challenges are in three broad areas. The first has to do with participation in the information society, the second is ICT impact on access, cost-effectiveness and quality of education, while the third is to do with the way that ICT changes the education process.

The various types of learning noted by researchers and educators fall into three general categories:

1. **Formal learning** takes place in schools and higher education institutions providing systematic education.
2. **Non-formal learning** occurs outside the formal education system but is nevertheless an organised event with specific target groups or clients and learning objectives. This includes 'continuing education', 'adult education by distance education or social interactive education', 'professional training,' 'literacy programs' and other organised programmes.



3. **Informal learning** is the individual acquisition of skills, knowledge and attitudes from the everyday experience and environment.

The term '**lifelong/adult learners**' is increasingly used for people who want to make use of learning tools and materials, which would traditionally be available in libraries but now are readily accessible via internet and through educational outreach programmes of major institutions that lead two broad categories of education --- Distance Education & Social Interactive Education.

Distance Learning is a method of teaching where students receive training from one or more physically distant (and often distributed) location(s). Students typically use various materials (books, references, CD-ROMs) and media (TV, internet, and postal mail) to replace direct face-to-face learning. Social Interactive Education refers to conventional face-to-face learning.

On the positive side, the computer is more widely used in the country than five years ago. Internet use is widespread, with the number of dedicated users (those who own an ISP account) having gone up from a mere 2000 to approximately 50,000+ in just 4-5 years.

Also, government incentives like tax holiday on software initiatives, reduction of duties on computer hardware and allowing the ISPs to choose vendor other than the government-owned BTTB has greatly helped to increase IT-related activities and awareness in the country.

But lack of infrastructure remains a big obstacle, especially for telecommunication and networking. Bangladesh remains the *most* expensive place in the world to subscribe to a local telephone service, despite being one of the poorest countries. Talk about getting internet through fast landlines via submarine cables has been going on for a while now. Like an evil big brother, BTTB (Bangladesh Telegraph and Telephone Board) is continuing its unethical business of being both a governing body and a competing service provider in the internet business. Recent unjustifiable increase in charges with ISP (400 per cent increase!) and in phone line usage for end-users (approx. 300 per cent increase!) can only hurt the growth of internet and computerisation in general.

The worst part of the situation is that the IT sector is taking a beating in the job market. Thousands of students who paid a hefty price for high-profile IT training now have hardly any employment avenues. IT training is sometimes being viewed as a scam (such as manpower export scams of the '80s) by a growing number of people. Thus, a fast reduction of interested/prospective IT students and eventually a further shortage of skilled IT professionals can become an unpleasant reality.

The internet and distance education

The internet plays an important part in ICT-based distance education, and most applications are dependent on the net. Therefore, in addition to the policy focused on the



telecommunications infrastructure supporting the internet, the policies and laws directly regulating the internet have an impact on the potential of ICT-based distance education.

The following policy principles and regulations are important and maintained by the government of Bangladesh:

- **Liberalization of Internet Service Providers (ISPs):** Bangladesh is following this principle like other developing countries.
- **General ‘hands off’ approach towards internet regulation:** This approach recognises the fact that the internet has developed rapidly, largely owing to the fact that it was free of hindering regulation. A view seems to be evolving that the common law should be sufficient to regulate activities on the internet (i.e., the commerce law for e-commerce, criminal law for internet pornography, etc.).
- **Promoting broadband and advanced communications:** This can be achieved by allowing competition to flourish and the government remaining ‘technology neutral.’ Several ISPs in Bangladesh are providing broadband communication.
- **Low import tax on computer hardware and software.**
- **Ensuring that transmission capacity pricing is low and cost-based:** Otherwise ISPs cannot offer affordable consumer prices to achieve a mass market.

From the observation of Bangladesh community, it seems that the following policy initiatives are important conditions and facilitators of ICT-based learning and distance education:

1. Government awareness of the importance of ICTs for national education: This demands understanding that a) information and communications technology are vitally important to the development of the economy and to participation in the global information society, with a corresponding need to develop appropriate skills, and b) ICT based learning and distance education can play a crucial role in broadening access to education for the whole society.

2. A strategic plan or policy: This must be based on an analysis of needs and priorities for the use of ICT to improve education. Key elements and concrete steps of such a strategic plan are:

- ICT skills integration in national curricula
- Equipping schools with computers & internet
- Initiatives and programs, which invite and attract private sector involvement

Two other conditions are important for the success of ICT-based distance education in Bangladesh. These are the presence of local participation and initiative, and serious considerations regarding the self-sustainability of projects.

Tele-centres/Community teleservice centres

Tele-centres are strategically located facilities providing community access to telecommunications and other information technologies. Tele-centres are typically equipped with a combination of the following:



- Telecommunication services such as telephony, fax, e-mail and internet (via dial-up or ISDN);
- Office equipment such as computers, CD-ROM, printers and photocopiers;
- Media services, including radio, TV, audio and video devices and multi-media hardware and software.

The government of Bangladesh with the help of donors and NGOs desires to establish tele-centres in each village, but that would require huge investment and better infrastructure. Without them, effective distance education using internet is not feasible in Bangladesh for the rural community.

In rural and remote areas of Bangladesh, financial viability becomes a problem in providing for a small number of residents the same depth and range of education opportunities as the capital Dhaka enjoys. Distance education can enhance and complement local resources. Also, the need for economic development in rural areas makes education all the more crucial. Unfortunately, in terms of telecommunications infrastructure, rural and poor areas are the most neglected part of the country, making ICT-based distance education difficult.

There is a wide range of possible rural policy plans and actions, some of the most common of which are listed below.

- Obligation attached to licenses requiring a certain roll-out target in rural areas (this could be individual lines, pay phones, or – most effective in developing countries – private-run phone shops or small tele-centres)
- Special rural licenses which are auctioned to the bidder asking for the least subsidy
- The set-up of a rural subsidy fund to supply the above subsidy, drawing a small percentage of revenues from all telecom operators to finance rural network expansion.

Empowerment through ICTs

ICTs can be used to assist people in their current economic activities, including farming, trade, and entrepreneurship. For instance, farmers could greatly increase productivity using information on improved technologies, agricultural inputs, weather and markets. Traders and other entrepreneurs need to find marketing information and disseminate information about their businesses. Students from the local communities who generally learn computer skills rapidly could be trained to serve as information intermediaries for the older generation.

In an agricultural country like Bangladesh, the internet may become an important source of information for farmers. If they know the use of the internet, they may download important information like:

- What are the benchmark best quality seeds of each crop?



- What are the diseases by which animals or plants may be attacked? How can they be recovered?
- Plant-related manures, fertilisers, insecticides etc.
- Recent research activities related to agriculture.
- Information of farms/organisations that deal with agricultural products.
- In winter, a lot of vegetables, fruits and flowers are harvested in Bangladesh. Farmers may be able to market these products to the developed countries through e-marketing.
- Information about the weather

With all these, a farmer may increase his productivity and export his product in developed countries, earning much more than he does at present.

Most of the NGOs in Bangladesh are using their websites in promoting their development work. They are using e-mail and other ICT-related tools to increase and collect funds from the donors for rural infrastructure development to ensure better life of the community.

The new information economy offers many possibilities for new IT-enabled businesses that Bangladeshi could establish or in which they could work. Most numerous are the service jobs outsourced by major corporations in the US and Europe. At the low end of the skill level and largest in number are jobs in data entry and data capture. Software programming, GIS, and systems analysis jobs require much higher skills and education, but Bangladeshi is moving into these jobs. While the business-to-consumer e-commerce area has generated a great deal of excitement, it can be a difficult field to enter. More profitable opportunities exist for small-scale enterprises in business-to-business and business-to-government markets if the government of Bangladesh allows online credit card transaction.

Initiatives of the Dhaka Ahsania Mission

Our intervention is for the purpose of taking ICTs to the doorsteps of the poor. They should be given the opportunity to master the skill to use this technology to their advantage, without feeling threatened. We work for the people in general to build a better tomorrow, the main thrust of our efforts being the poorest of the poor, the disadvantaged and marginalised people who include:

- Those who are landless or have a maximum of 0.5 acres of land, inclusive of homestead
- Those who earn their livelihood from physical labour
- Those who sell their labour for around 180 days a year.





Community at Ganokendra

Information regarding the government, the private sector, education, health, environment and the important daily issues must be available to all the people. At present such information is only available in cities and major districts. The high-tech communication media is not relevant in this context, as the infrastructure to access it does not exist. Because of lack of communication and other support facilities, rural areas in Bangladesh have become distant centres of poverty and hunger. The attempt to provide computer and internet facility in the rural areas may usher in the scope to shorten this distance and create opportunities for addressing poverty and hunger through this technological intervention.

Dhaka Ahsania Mission (DAM) is a leading non-government organization (NGO) in Bangladesh working at the grassroots level as well as national and international levels with the aim to develop social and spiritual life of the human community. It works to render all possible help to the suffering humanity at large with basic thrust on poverty alleviation and socio-economic empowerment of the poor, especially women. DAM is the first to provide innovative services in different fields of education bringing sustainable impact for improvement of quality of life of the target beneficiaries.

Its operational objectives are:

- Promotion of human resource development through both formal and non-formal basic and higher education
- Undertaking programs for eradication of illiteracy and alleviation of poverty
- Undertaking programs for uplifting dignity of women through spiritual, social and economic development
- Preservation of natural environment and ecology
- Prevention of illicit use of narcotic drugs and treatment and rehabilitation of drug addicts
- Promotion of preventive and curative health services including establishment of general/specialised hospitals, health clinics, maternity and child health centers, home for the old.
- Development, publication and distribution of books and other teaching learning materials
- Supporting the works of the UN and dissemination of knowledge of its principles and activities.

In Bangladesh, the Dhaka Ahsania Mission was the first to:

- Develop a structured adult literacy curriculum and educational materials;
- Develop and introduce separate curriculum and primers for education of the adolescents;
- Develop graded follow-up materials for completers of basic literacy courses;
- Develop highest number of continuing education materials in the country so far;
- Establish a Teachers Training College in the private sector;
- Establish a University of Science & Technology in the private sector;
- Start polytechnic diploma programmes in the private sector;
- Provide for graduate and post-graduate university courses in primary and non-formal education;
- Launch the 'Each One Teach One' programme for those who can not attend centre-based literacy classes;
- Establish a specialised vocational training institute for working children
- Establish a cancer hospital.

Achievement of selected programme areas and impact:

- Non-formal education contributed to socio-economic development and cultural improvement of the target beneficiaries and increased their access to services provided by government agencies/NGOs
- Continuing education facilitated lifelong learning, leading to improvement in educational status and vocational skills of the poor and disadvantaged, particularly rural women
- Water and sanitation programmes brought positive attitudinal changes in hygiene practices enabling improvement in health status and decreasing mortality rate
- Drug prevention program created positive awareness at the community level, thus saving lives of many youths
- Child and women trafficking prevention programme made vulnerable groups aware of the dangers of being trafficked and helped reduce the incidence of trafficking
- Relief and rehabilitation programme helped mitigate sufferings of the people during natural disasters, enabling them to start life afresh
- KATTC provided opportunities for improvement of quality of secondary education
- AUST and AIICT offered opportunity for developing skilled human resource for the country
- ITVET facilitated entry of the poor youth force into job market by offering employable skills

The following is a description of some projects of Dhaka Ahsania Mission related to ICT and adult education.

Ahsanullah Institute of Information and Communication Technology (AIICT)

Dhaka Ahsania Mission, a national-level NGO, which has consultative status with United the Nations' ECOSOC and operational relations with UNESCO, has established the



Ahsanullah Institute of Information & Communication Technology (AIICT) with a view to spread the use of information technology all over Bangladesh. The aim of the AIICT is to provide quality service to society in the field of dissemination of information technology gradually extending the network to the rural areas.

The objective of the AIICT is to contribute towards alleviation of poverty in the country through creation of IT-based employment opportunities, to extend computer and IT training facilities to the district level, closer to the doorsteps of the poor population, to produce trained and quality personnel in the computer and IT fields.

The mission and goal of AIICT is to establish a minimum of one ICT centre in each of the 64 districts of Bangladesh to spread ICT all over the country. Building people's computer skills through quality training to support their success is our main motto. We are committed to the creation of a better tomorrow, built by young and enthusiastic men and women with a shared vision.

AIICT has several programmes such as B.Sc. in computer science, professional training (that is, diploma in database, web development & multi-media), career-oriented training (i.e. training on Visual Basic, Oracle, E-Commerce, C/C++, Java, PC assembling and networking), kids' computer training & women's IT training, computer sales, services & networking, customised software development and cybercafe.



A view of the AIICT computer lab

Dhaka Ahsania Mission (DAM) has established AIICT by using his own resources, without any financial support from international organisations in this respect. If such help comes, we can fulfill our mission faster and more easily. It should be mentioned that establishing a minimum of 64 ICT centres in Bangladesh would require expenditure of approximately \$10 million.

A large number of students, professionals, unemployed women and men are getting training in ICTs from AIICT. After completing their training, they are getting prestigious jobs in renowned organisations in Bangladesh. Every day, more than 100 people are browsing web pages at a cost of Taka 20 per hour (i.e. \$ 0.33/hour) by using our cybercafe, where the download speed is 128 kbps. To know more about AIICT one may visit www.ahsanianet.net or www.ahsanianet.org and then click on the link to Ahsanullah Institute of Information & Communication Technology (AIICT).



An AIICT classroom

Ahsanullah University of Science & Technology (AUST)

Ahsanullah University of Science and Technology is a reputed educational institution in Bangladesh. It was established in the year 1995 in accordance with the needs of the country under the Private University Act, 1992. It is approved by the Government of the People's Republic of Bangladesh and sponsored by the Dhaka Ahsania Mission. The University has been recently awarded membership of the international Association of universities.



Computer lab and library

The academic programmes of the university are administered under four faculties and one institute, namely the Faculty of Architecture and Planning, Faculty of Engineering, Faculty of Business and Social Science, Faculty of Education and Institute of Technical and Vocational Education and training. The university provides excellent faculties, library, lab facilities, medical service and hostel facility for the students.

The department of Computer Science and Engineering, abbreviated to CSE, has been offering an undergraduate engineering degree program since the establishment of the university in 1995 with a view to make proper higher education available to the young well as to meet the huge demand of highly qualified specialists in the field, both at home and abroad. The four-year programme is spread over eight semesters, with two semesters per academic year.

The entry qualification for the programme is Higher Secondary Certificate (H.S.C., usually with not less than 70 per cent aggregate marks and 45 per cent marks in mathematics) or A-level with comparable results or equivalent. The usual intake of students in the department is once in an academic year, 80 to 100 students in a batch. For effective academic processes, each batch is divided into two sections for theoretical courses, and each section then is divided into two or three sub-sections for laboratory classes.



There are about 450 students currently enrolled in the department. The first two batches of students graduated in the year 1999 and 2000 respectively are employed in different prestigious institutions and organisations. Some of them have gone for higher studies abroad. Also, a number of students of the department have taken transfers to foreign universities.

More can be learnt about AUST by visiting www.aust.edu or www.ahsaniah.org and then clicking on the link to Ahsanullah University of Science & Technology (AUST).

Institute of Literacy and Adult Education (ILAE)

The aim of the ILAE is to promote the professional standards and efficiency of the literacy and adult education personnel involved in various development programmes and projects which are being implemented by NGOs as well as public sector agencies concerned.

The ILAE has the following objectives:

- Development of non-formal education workers;
- Development of non-formal basic and continuing education materials for children, adolescents and adults,
- Development and improvement of technical skills of various occupational groups; and
- Advisory/ consultancy services to various agencies and organizations on planning, designing, implementation, management, research, evaluation and monitoring of non-formal education programs.

In addition, ILAE plans to organize campaigns by holding workshops, seminars and symposia on the one hand and through the mass media like radio, TV, newspapers, on the other, with a view to raising social awareness and mobilisation of public opinion so that the people themselves can assert their rights to literacy and education.

The Institute has two major divisions - the Training Division and the Materials Development Division. Apart from these, two units are attached to the Institute - the Audio-Visual Unit and the Resource Centre. It organises regular training courses. The Institute is recognised by the ministry of education of the government of Bangladesh as the National Training Institute for Literacy Personnel. It has also been included in the Regional Training Network of UNESCO, PROAP, and Bangkok.





A view of the Digital Lab

The Institute has board and lodging facilities for trainees, along with library and recreational arrangements. It conducts several courses – short-term and long-term. Short-term courses normally vary from 5 to 15 days. Training sessions are so designed as to make it participatory, using a wide variety of participatory training methods. Daily review and evaluation are done and recorded for the improvement of and dove-tailing with subsequent training sessions.

Non-formal basic education

Non-formal basic education programmes launched by DAM are aimed at providing basic learning skills to them who remains out of formal education due to non-enrolment or drop-out. Age-specific separate programmes have been designed to suit the psychosocial needs of the participants.

The basic thrust is to demonstrate good practices in NFE and advocacy for replication of those at the appropriate level. The basic principles are:

- Learner-centred teaching-learning process
- Need-based curriculum content monitoring
- Professional development of NFE personnel
- Equivalency of learning between non-formal and formal education



Components of the NFE programme

- Early childhood care and education
- Primary education for out-of-school children
- Non-formal secondary education for urban working children
- Adolescents education and development
- Adult literacy program

Continuing Education programme

Continuing Education is one of the major components of DAM's NFE programmes. It is a common experience that a time-bound literacy programme does not yield the desired results, unless such activity is followed by a programme of continuing education, providing scope for reinforcing the acquired literacy skills of the participants.

DAM therefore, developed a model of continuing education and has been implementing it since the early years of the last decade with time-to-time review and modification. This model has been designed to offer a centre-based open-ended continuing education programme. Under this programme, community learning centres locally known as Ganokendra are organised and managed by DAM with community support and involvement, with the ultimate goal of transferring their ownership and management responsibility to the community itself.

DAM created an opportunity for secondary school graduates to go for technical and vocational education through the Institute of Technical Vocational Education and Training. Similarly, the Khan Bahadur Ahsanullah Teachers Training College provides opportunities for the professional development of teachers through graduate and post-graduate programmes. DAM is currently working for developing an equivalency framework of formal and non-formal education as part of continuing education.

Ganokendra

In a country like Bangladesh with low literacy rates and widespread poverty, it is essential to make provision for continuous learning of the people with limited literacy, particularly of the neo-literates - the output of NFE programmes. As a result of government and non-government interventions, a good number of illiterates are becoming literate with basic reading, writing and innumeracy skills. But for the retention of the acquired skills and to go for further learning, there is need for an extensive institutionalised continuing education.

Without adequate provision for retention of newly acquired literacy skills by the beneficiaries of various literacy programmes, there is a danger of the impact being lost. The creation of scope for continuing education can facilitate the life-long learning needs of society, besides enhancing existing knowledge and skill levels. Such learning opportunities should be easily available to the people, which would continuously lead the



community to better life and living, and to sustainable development. Ganokendra (people's centre) has been evolved to function for meeting all these needs.

Innovative features

- Ganokendra is accessible to all people in the area, not limited to the neo-literates from literacy centers only. The illiterates, out-of-school children, people with limited reading skills, local school students and youths are allowed for participating in various activities.
- The literacy support is not time-bound. It addresses learning needs of the participants for an indefinite period, and offers scope for life-long learning.
- Members and other local agencies use the Ganokendra as an information and issue-based discussion and training centre. It also serves as an information centre, with newspapers, periodicals, newsletters, information-communication materials of government and non-government organisations and agencies made available there.
- Socio-economic and environmental programmes and services of various agencies are linked with Ganokendra activities towards people's empowerment and community development.

To improve the quality of life, facilities are created for life-long learning in order to bring positive change in their lives. Support in terms of supply of books, newspapers, newsletters, magazines, booklets, posters, wall magazines, etc. are provided for people at different levels of literacy skills. Basic and advanced educational programs are organised to cater to the learning needs of the local people. To ensure access to other elements of quality of life, linkages are established with various agencies having health, sanitation, education, environment, credit and recreational services.

To achieve social empowerment, participation of Ganokendra members in social activities and decision-making is promoted through gender sensitisation, organisation of socio-cultural activities, leadership development and development of skills in decision-making. Specialised training courses are organised to address these needs. Information and communication materials for developing these skills are regularly supplied to the Ganokendra.

To achieve economic self-reliance required skills of the members are developed through vocational training and by establishing linkage with micro-credit organisations or programmes. Scope is created for development of enterprises in the area, at the initiative of Ganokendra, to create employment opportunities in the community.

The members of Ganokendra learn by doing. Socio-cultural activities are organised with community support for promotion of gender development, environment conservation, recreation, immunisation, etc. Each Ganokendra can have its own plan for organization of social activities, depending on the decision of the members. In some Ganokendras, local experts, such as local craftsman on handicraft design, are invited to facilitate discussion meetings or skill training programs. In other cases, assistance from outside resource persons, such as government health workers, are utilised for the development of



community health programmes. Crucial information, such as methods of detecting arsenic poisoning, is collected from health department.

Organising a Ganokendra requires a step by step approach, starting with a survey, and going on to organisation of learners'/ community groups, formation and orientation of the management committee, training of facilitators, finalisation of Ganokendra infrastructure including physical construction of the centre house, and supply of materials, equipment, books and other reading material.

In the organisation process, need assessment surveys, resource identification surveys and motivational campaigns constitute the initial steps, in each of which, participation of the users is the crucial element. Household surveys or baseline surveys are conducted to make an assessment of the situation of the needs of the community as well as of the individuals to be addressed. Resource identification surveys, conducted in most cases simultaneously with the baseline surveys, are aimed at identification of material resources, including provision for accommodation of the centre, resource persons, possible program personnel, membership, financial resources and the like. During the process of need assessment survey, consultation meetings at the community level are also organised. The beneficiaries actively participate in selecting sites for Ganokendra, identifying members and planning activities.

Ganokendras are organised by groups of newly literate people with back-up support from the DAM and in collaboration with the local community. One facilitator is recruited from the community who is designated a Community Worker. S/he initiates the activities and looks after smooth functioning of the Ganokendra. The facilitators are normally women from the locality.



Learning circuitry (left) and net surfing (right) at Ganokendra

The overall management of the Ganokendra is the responsibility of the management committee, consisting of 5-7 members, representing the people of the locality. Local people, existing and potential users of the Ganokendra are consulted in the process of the formation of the committee. It is responsible for developing plans for the activities the Ganokendra would undertake, such as, training courses, networking activities, community library etc. and ensuring that the activities are implemented satisfactorily.

The members of the committee are provided with a brief training or orientation on the concept, philosophy and functioning of the centres, the scope of activities of the centre and on the ultimate process of transfer of ownership.

There is regular communication between the facilitators, management committees and DAM field staff, all of which attend monthly management meetings at the Ganokendra. While this committee takes decision on organisational aspects and on the spectrum of activities of Ganokendra, the facilitator takes care of the actual operational aspect or day-to-day functioning. The decisions in the meeting are taken on consensus basis and implemented by the facilitators with community and DAM support. Implementation of decisions is reviewed in the follow-up meetings. Besides local supervision, DAM monitors functioning of Ganokendra regularly against set indicators.

Future plans related to ICT and adult education by the Dhaka Ahsania Mission

- With the technical help of AIICT, Dhaka Ahsania Mission will supply 3-10 computers to each Ganokendra where ICT infrastructure is available.
- With the help of AIICT, Dhaka Ahsania Mission will establish tele-centres in rural areas of each district.
- AIICT will establish 2-5 servers at its office located in Dhaka for online distance education. Experienced teachers may then teach the poor using the internet, with minimum fees.
- AIICT will give training on ICT to 2-3 villagers of each Ganokendra and give them the responsibility to maintain each Ganokendra and teach other villagers using social interactive education system by taking minimum fees.
- AIICT is developing ICT-related books in Bengali so that rural people can understand easily and will supply those books to each Ganokendra.
- AIICT, a project of Dhaka Ahsania Mission, will gather information of each chapter of those ICT books. Information related to frequently asked question by the trainees of each Ganokendra or distant learners will be collected, so that answers can be supplied electronically or by booklets to each Ganokendra.

Lessons and challenges

The one resource that liberates people from poverty and empowers them is knowledge. The possession of knowledge is empowering, while lack of knowledge is debilitating. The World Bank forum Voices of the Poor which secured feedback from 60,000 people in 60 countries concluded that people wanted access to knowledge and opportunities instead of charity to fight conditions leading to poverty. And knowledge is not a scarce resource - it is infinitely expansible and proliferates with its use. "...the capacity to acquire and generate knowledge in all its forms, including the recovery and upgrading of traditional knowledge, is perhaps the most important factor in the improvement of human condition." (Bezanson and Sagasti 1995:5-6) Knowledge and its widespread dissemination in an absorbable and usable form is therefore essential to initiate the change process for development.



Bangladesh faces considerable challenges concerning illiteracy, secondary and tertiary education as well as in the area of IT education and capacity. The examples show a broad range of different concepts and uses of technology for distance education and learning and social interactive education.

In terms of the environment for telecommunications and IT development, the Government of Bangladesh has broadly established the right policy conditions such as liberalisation and the focus and awareness on infrastructure development. As stated, some improvements need to be made to the effectiveness of regulation and creation of a more supportive policy to encourage rural telecommunications development.

What is missing is a dedicated view and approach from the government to take advantage of technologies for distance education. As a low income country, Bangladesh has hardly any funds to equip and sustain its traditional educational institutions. But this overview shows that there seem to be considerable willingness and self-interest in the local private sector to sponsor ICT-based educational projects.

Creating a national distance education policy, which can channel and incentives the private sector to place money into appropriate projects is what is needed from the government. A need-based, clear policy on how Bangladesh can overcome its educational problems would also entice more international public and private sponsors to help Bangladesh.

Recommendations

- Facilities should be built to promote ICT education and computer-aided education in all levels (primary to post-graduate). Donor agencies, non-government organisations and other development partners of the country should participate in building up the necessary capacity in this area. The mutually supportive roles of public and private finance point the way to raising the overall level of investment in ICT education and training.
- Teachers are the most vital resource in promoting modernisation and higher standards; their recruitment, training, deployment and appropriate incentives are critical to ICT education system in Bangladesh. Since there is an acute shortage of qualified teachers, short-term intensive training on ICT may be arranged. Wherever necessary an international faculty or expatriate Bangladeshis working abroad may be invited as visiting faculties at least once a year.
- Modern and effective ICT networks need to be built to support traditional methods of teaching and learning and to increase the quantity and range of education and training, for example, through distance learning.
- The promotion of the study of foreign languages (mainly English) to increase the understanding of different cultures and enhance mobility in a globalised ICT world.
- The developing of a culture of entrepreneurship in ICT education, not least in developing the closest R&D links between universities and companies.



- Everyone should have access to ICT learning and training, not just those who are intellectually gifted or economically privileged. Special attention should be given to the needs of the disadvantaged. The use of ICT as a teaching tool and for delivery of distance learning can help stretch our limited teaching resources and provide a high quality education to all.
- Everyone should be encouraged and enabled to continue ICT learning throughout their lives, not just in the years of compulsory schooling.
- For primary and junior secondary level, general science textbooks should adequately cover fundamental concepts on computers and their numerous applications. Differences between hardware and software, history of computers and their use, classification of computers, concept of computer network, internet and emails, introduction to computer peripherals and input/output devices should be introduced.
- There should be uniformity in course curricula and degree requirements. Course curricula should be revised at no more than two-year intervals.
- Post-graduate programmes should be strengthened. Most of the graduates leaving the country for higher studies do not return. A rigorous and standard post-graduate programme will encourage more students to complete their higher studies in the country and eventually fill up the current vacuum of qualified teaching staffs.
- Books and journals should be made available in the University libraries.

ICT infrastructure

- In order to encourage BTTB to improve its services in an open competitive environment, the private sector should be encouraged to invest in and operate tele/data-communication infrastructure.
- In order to have access to global communication network, Bangladesh should be connected with submarine cable.
- IT parks with all necessary facilities will be established in strategic locations of the country. Entrepreneurs, both local and overseas, would be allocated space at a very low rental in such IT parks.
- Capacity of power plants needs to be increased to take care of the total national requirement with emphasis on rural areas.
- Necessary organisational structure should be created exclusively for the ICT industry to consolidate the various aspects of ICT now being handled by the ministries of science & technology, commerce, industries, cultural affairs, law, post & telecom, and others.
- The bandwidth capacity and availability needs to be ensured all over the countries at a reasonable cost to encourage the growth of the internet, IT-related industries, e-commerce and e-governance and will also help facilitate video conferencing.
- An integrated flexible and reliable nation-wide transmission system capable of voice, audio, video, data and graphics transmission should be ensured. National Information Infrastructure should be developed and it should be connected to Global Information Infrastructure through an information superhighway to create, collect and sell software and provide IT-enabled services to the world market.



- Inter-ISP communication is time-consuming and costly, as there is no internet exchange for the country. The problem should be solved by establishing internet exchange in the country.

Research

ICT has been developed in Bangladesh with hardly any plan or direction, due to lack of research opportunities. No effective initiative has been taken by the Government of Bangladesh or NGOs to develop policies to spread the use of ICT throughout the country to eliminate digital divide, gender problems etc. Hence I have identified some further research that needs to be done immediately to spread the use of ICT among the rural community such as:

1. Lifelong/adult ICT learning
2. Gender, ICT, Bangladesh:
3. Software applications and poverty reduction in Bangladesh:
4. E-commerce potential in Bangladesh:
5. Focus on Tele-centres: How can they contribute to social development in Bangladesh
6. The networking revolution: opportunities and challenges for Bangladesh.
7. Agriculture information management
8. Disaster management and ICT.
9. Health and ICT.

Finally, research and development in ICT will focus on need-based fundamental and applied research, contributing to the improvement of quality and efficiency of the application to our ICT environment.

The Dhaka Ahsania Mission has already started its above-mentioned activities using its own resources, with very limited financial help from donors. With proper resources, it would be able to eliminate the digital divide and improve the socio-economic condition of the rural community.

The IT industry of Bangladesh is still at the rudimentary level. Nevertheless, the government and the private sector are making efforts to make advancements in this sector. With the right progressive attitude and cooperative efforts of the IT-related companies, Bangladesh should be up-to-date with the global IT scenario.

However, on a cautious note, it needs to be realised that information and communication technologies by themselves cannot be an answer to all problems facing Bangladesh. ICT does bring new information resources and can open new communication channels for the rural communities. It offers new approaches for bridging the information gaps through interaction and dialogue, building new alliances, inter-personal networks, and cross-sectoral links between organisations. The benefits include increased efficiency in allocation of resources for development work, less duplication of activities, reduced communication costs and global access to information and human resources.



Finally, we need to analyse what needs to be done to bring ICT to more than hundred million people. A concrete programme with a definite time-frame (say 10 years) is needed to enable a large section of people to use ICT resources. Unless various sections of people from all walks of life, from the towns as well as the villages, participate in this effort, ICT will remain a small part of our relatively small economy.

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