

Current Status and Prospects for E-learning in the Promotion of Distance Education in Bangladesh

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INTRODUCTION

The e-learning is widely used in most of the developed countries to promote distance education (DE) and life long learning. It can be defined as an innovative approach for delivering electronically mediated, well-designed, learner-centered, and interactive learning environments to anyone, anyplace, anytime by utilizing the internet and digital technologies in concern with instructional design principles (Anonymous 2003, Hedge and Hayward, 2004. Applications and processes of e-learning include web-based learning, computer-based learning, virtual classrooms, and digital collaboration, where contents is delivered *via* the internet, intranet/extranet, audio and/or video tape, satellite TV and CD-ROM (Islam 1997). E-learning is now a multi-billion dollar activity worldwide. The rapid and intensive use of ICTs in education in the developed countries facilitated to the establishment of 100% ICT-based universities called 'virtual universities'. In addition, many world-leading conventional universities are now also offering some of their academic courses through various ICTs for their distant learners and established themselves as the 'dual mode universities'. The historic launching of 700 courses from 33 academic disciplines as 'Open coursewares' by <http://ocw.mit.edu/OcwWeb/Global/all-courses.htm> Massachusetts Institute of Technology (MIT) offers a tremendous resource for faculties, students and self-learners around the world. In contrast, the infrastructure of ICTs in the developing or the least developed countries is very weak and thus, intensive use of e-learning in DE is still a dream for their universities and institutes. Recently, ICTs are rapidly expanding in some of the developing countries, and hence, it offers an opportunity to consider the use of ICTs in the promotion of DE. It offers students considerable benefits including increase access to learning, life-long learning opportunities, and convenience of time and place (Pierre 1998).

Bangladesh is one of the most densely populated countries in the world with nearly 140 million people within an area of 147,570 square kilometers. Its vast population would be the major resources of the country. However, in transforming the potential people into a productive force and ensuring a dynamic environment for social, economic and political development is still a big challenge for its government. Though the literacy rate is officially said to be 66%, but according to private survey the rate is only 42%. Education, therefore, has been recognized as a priority sector by all governments since her independence in 1971. Distance education is an important alternative for educating mass people in Bangladesh for many socio-economic reasons. More importantly, the opportunity for higher education is extremely limited in Bangladesh, and therefore, even students, who can afford to finance their studies, it is very difficult to get admission into the universities due to limited capacity (Sadeq 2003). Dropouts in education from primary to the university level are very high in Bangladesh mainly due to economic and other social reasons. This scenario is well reflecting in very high enrollment (approx. 400 thousands) of students at BOU, the first and only national distance learning university. Recently, ICTs are rapidly expanding in Bangladesh due to the deregulation of laws and policies by the Government. Therefore, introduction of more e-learning or ICTs may boost DE in Bangladesh.

The e-learning was first introduced in Bangladesh in 1956 by a radio-broadcasting program, and later expanded much by the establishment of BOU in 1992. However, BOU is still using mostly traditional one-way media and far behind to use modern interactive ICTs in delivering its courses. This paper thus focuses the current status and future prospects for introducing e-learning in DE in Bangladesh considering the socio-economic conditions and ICT infrastructure of this country.

HISTORICAL BACKGROUND AND NEED FOR DE IN BANGLADESH

The case for open and distance education in Bangladesh is an important issue for several pressing

reasons. Firstly, the vast majority of the people live below poverty line. They are unable to attend the urban based institutions and thus remain deprived of higher education despite their superior merit. Secondly, those who join work force without completing their studies due to family commitments are unable to work for studies and also to find a place in the traditional institutions of higher learning, even if some of them have strong desire to higher studies. Thirdly, the opportunity for higher education *i.e.*, the places are extremely limited in Bangladesh. Therefore, even those who can afford to finance their studies find it difficult to get admitted to any universities (Sadeq 2003). Fourthly, the tradition of childhood and early marriage in the country deprives the female population from higher education. Besides, there are some other usual factors like physical disabilities, remoteness of localities, higher tuition fees in most private universities, and so on. These are the reasons for why millions of people are deprived from higher education in Bangladesh despite their keen interest and eligibilities. Open and distance education can open up the opportunities for higher education for such a vast under-privileged population. Bangladesh is generously endowed with human resources that need to be well equipped with literacy and skills to contribute to economic development, which is badly needed for this country. The open and distance education is expected to do a lot in this field if provided with adequate facilities and quality.

The roots in the history of open and distance learning in Bangladesh (the then East Pakistan) date back to 1956 when the then Education directorate distributed 200 radio receivers to the educational institutions, which in run, led to establishment of a Audio-visual cell and later Audio-visual Education Center (AVEC) in 1962 (Sadeq 2003). Upon creation of an independent Bangladesh in 1972, a pilot project 'School Broadcasting Program (SBP)' was undertaken during 1978-1980, which was later merged with AVEC to establish National Institute of Educational Media and Technology (NIEMT). The NIEMT was later transformed into Bangladesh Institute of Distance Education (BIDE) in 1985. Thereafter, Bangladesh Open University (BOU) was established in 1992 with major financing of Asian Development Bank (ADB). BOU started its operations in 1995 and the BIDE was merged with it.

SOCIO-ECONOMIC CONDITIONS AND ICT INFRASTRUCTURE OF BANGLADESH

The socio-economic indicators of Bangladesh are shown in Table 1. It is one of the developing countries in the world with a growth rate of GDP around 5.6%. Like other less developed countries, ICTs infrastructure in Bangladesh is very weak. Computer, the important tool for communication and e-learning was first introduced to Bangladesh by the Atomic Energy Commission in 1964. To be followed later in the 70s by its use in the financial sector. Personal Computers gained popularity in the early 1990s when they became more user-friendly and affordable, but the real boost came in 1998 when the Government exempted computers and ICT accessories from taxes, a move that coincided with substantial price reductions in the global market (A and J consultants 2004). The consumption of ICT in Bangladesh is rapidly increasing both in public and private sectors (Table: 2) (A and J consultants 2004). Almost all leading universities have departments of computer science and engineering, and thus 6000 new graduates are joining in ICT in the country (Table: 2). Bangladesh has gained 1.4 per cent tele-density now (Anonymous 2004).

Table 1. Key indicators of Bangladesh

Population	138.4 million
GDP	\$ 46 billion
GDP real growth	4.80%
GDP per capita	\$380
PPP	\$ 238.2 billion
PPP per capita	\$ 1,800
Literacy	43.10%
Phone lines	950,000 (2004)
Telephone density	0.69 (2004)
Mobile phones	1,300,000 (2004)
Mobile density	1.59 (2004)

Source: CIA Factbook, US Department
of State, Network Dynamics Associates

Table 2. Some important data on ICTs in Bangladesh

Land phone (operated by BTTB) user	850,000
Mobile phone (operated by 4 companies) user	1.8 million
Total number of ISP	62
Internet user	2 million
Dial-up subscribers accounts	250,000
Broadband subscribers accounts	150,000
Number of universities offering ICT related courses	72*
IT training centre	>100
Total number of ICT related graduates from the universities every year	6000

Source: Grameen cybernet (<http://www.citechco.net>)

*21 public and 51 private university

BTTB: Bangladesh Telegraph and Telephone Board

ISP: Internet Service provider

Along with BTTB, many private companies such as Grameen Phone, Telekom Malaysia, British Telecom, Aktel-TM international Ltd. (<http://www.actel.com/>), City Cell (<http://www.citycell.org/>), Pacific Bangladesh Telecom Limited (BPTL), Sheba Telecom (<http://www.shebatel.com/>), World Tel Bangladesh, are expanding their ICT services throughout the country. Recently, government approved VoIP (Voice over Internet Protocol) in Bangladesh. Internet, e-mail and mobile phone access is dramatically increasing and expanding due to the gradual price down by the competition among the private companies (Table:2)

ROLE OF BANGLADESH OPEN UNIVERSITY IN THE PROMOTION OF DISTANCE EDUCATION

Bangladesh Open University (BOU), a public sector university, has emerged as the first University in Bangladesh to introduce higher education through distance mode. The university has four objectives. One of these is to meet needs in higher education but three others are all relevant to basic education: to increase access, especially in rural areas, to basic, secondary and vocational education; to raise the quality of education through instructional technology; to strengthen informal and non-formal programs. The BOU has set up 12 regional resource centers (RRCs), 80 local centers (LCs) and more than 800 tutorial centers (TCs) throughout the country. Besides BOU, a private dual-mode institute named Asian University of Bangladesh has also been offering some formal academic programs through distance mode (Sadeq 2003). However, its contribution to DE is very small compared to the BOU. Therefore, a detail description of BOU and its academic programs are included in this report to understand the current situation of ICT use in DE, and find out potentials for e-learning in Bangladesh in future.

Academic Programmes

BOU provides higher education and professional training in wide areas such as agriculture, business, education, arts, science and technology as well as basic education at secondary and higher secondary levels. It introduces several formal academic programs from Certificate to Masters Levels under six academic schools (Table 3).

Current enrollment of BOU is approximately 400 thousands. This number is higher than the total enrollment of all traditional universities in the country (Fig. 1 and Table 3). Considering the importance of life-long education, BOU broadcasts many non-formal programs in the field of agriculture, health and nutrition, environment, livestock and poultry, pisciculture, public laws, ethics, family planning and so on through national TV and radio-broadcasts (Anonymous 2002).

Mode of Teaching

Mode of teaching is very important for distance learning. Mixed mode uses several different media methods or deliveries such as video and e-mail compared to single mode which is one delivery method. "Single mode delivery systems do not provide enough instructional power to ignite the student's interest because they fail to provide student involvement (Hirschbuhl *et al.* 1995).

As a distinct mode of imparting education, Bangladesh Open University relies heavily on print materials, electronic media like radio-television and audio-video cassettes, and face to face tutorial services (Islam 2005). The use of these techniques helps BOU to take its academic programs to the door-steps of people far and wide. It makes room for in-house education. Considering the rapid expansion of ICTs in the country, BOU should introduce more electronic media like CD-ROM, e-mail, internet for its advanced learners (Table 3).

Indeed, BOU has been broadcasting some radio and TV programs for the students of each formal program through national TV and radio. The broadcasting time of those programs are sometimes not convenient to the target learners. Therefore, BOU could easily make copies of those recorded programs on CD/CR-ROM and add with respective package of course materials. However, it is necessary to survey of student access in common ICTs to make a pilot project for introducing some interactive e-learning systems (proposed) with current modes of delivery of courses for the BOU students (Table 3).

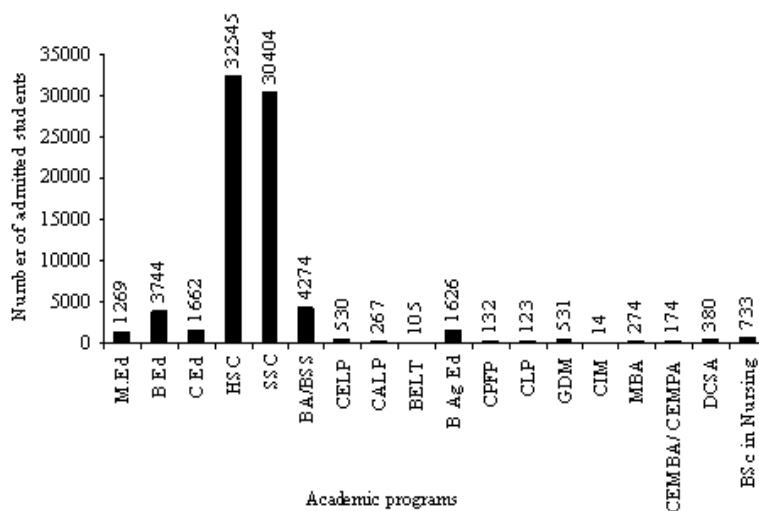


Fig.1. Number of students admitted in different academic programs of BOU in 2003

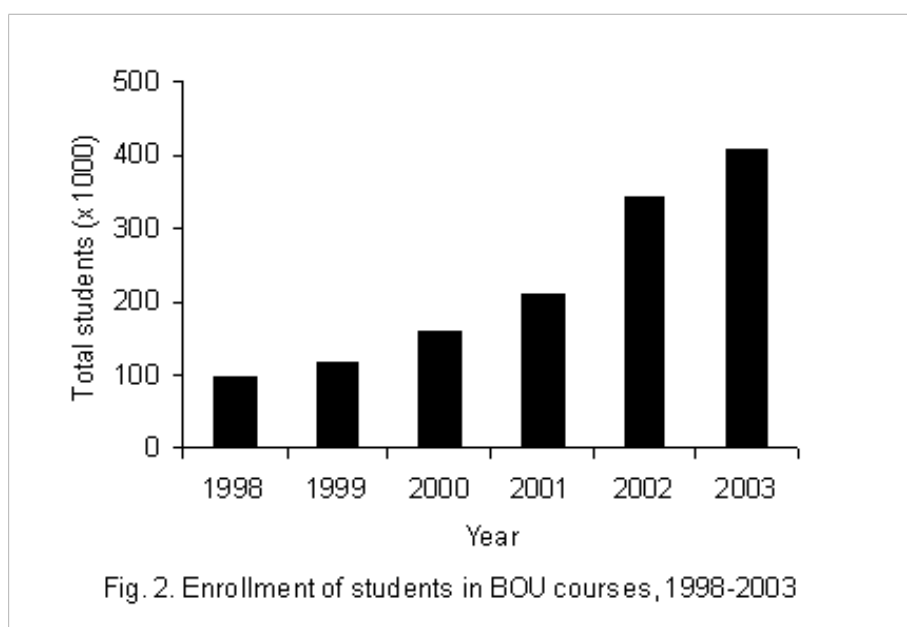


Fig. 2. Enrollment of students in BOU courses, 1998-2003

Staffs

New skills must be learned by faculty members to meet the needs of quality distance education (Sherry and Mores, 1995). BOU has well-trained and skilled academic and management staffs. Almost all teachers and higher ranked officers received an advanced training in distance and open learning in home and abroad funded by ADB (Anonymous 2002, BOU 1997). They received training in all aspects of DE including modern management, computer skill development, information technology, printing technology, media production, mass communication, communication skill development, environmental control, transport management, editing, module writing *etc.* These skilled staffs are able to introduce and run any new technology for e-learning.

Table 3. BOU academic programs, modes of current and proposed delivery media

School	Formal Programmes	Level	Media used	
			Current media	Proposed media
Open School	1. Secondary School Certificate (SSC)	Certificate	Pr,TV,R	AC
	2. Higher Secondary Certificate (HSC)	Certificate	Pr,TV,R	CDR
School of Education	1. Certificate in Education	Certificate	Pr,TV,R	CDR
	2. Bachelor of Education (B. Ed)	Bachelor	Pr,TV,R	CDR, EM
	3. Master in Education (M.Ed)	Master	Pr,TV,R	CDR, EM OCW
School of Business	1. Certificate in Management (CM)	Certificate	Pr,TV,R	CDR, EM, OCW
	2. Graduate Diploma in Management (GDM)	Diploma	Pr,TV,R	CDR, EM, OCW
	3. Masters in Business Administration (MBA)	Master	Pr,TV,R	CDR, EM, OCW
	4. Commonwealth Executive MBA/MPA (CEMBA/CEMPA)	Master	Pr	CDR, EM, OCW
School of Agriculture & Rural Development	1. Certificate in Livestock and Poultry (CLP)	Certificate	Pr,TV,R	CDR, VC
	2. Certificate in Pisciculture & Fish Processing	Certificate	Pr,TV,R	CDR, VC
	3. Diploma in Youth Development	Diploma	Pr, AC	CDR, VC
	4. Bachelor of Agricultural Education (BAgEd)	Bachelor	Pr,TV,R	CDR, VC
School of Social Science, Humanities & Language	1. Certificate in Arabic Language Proficiency (CALP)	Certificate	Pr,TV,R, AC	CDR
	2. Certificate in English Language Proficiency (CELP)	Certificate	Pr,TV,R, AC	CDR
	3. Bachelor of Arts/Bachelor of Social Science (BA/BSS)	Bachelor	Pr,TV,R	CDR, EM
	4. Bachelor of English Language Teaching (BELT)	Bachelor	Pr,TV,R	AC, VC, EM
	5. Masters in Education (MEd)	Master	Pr,TV,R	CDR, EM
School of Science and Technology	1. Diploma in Computer Science and Application (DCSA)	Diploma	Pr,TV,R	VC, EM, OCW
	2. B. Sc in Nursing	Bachelor	Pr,TV,R	VC, EM

Source: Student Support Service Division, BOU

VC, video cassette; AC, Audio Cassette; Pr, Print; TV, television; R, radio; OCW, open course ware, CDR, cd-room; EM, e-mail

Students enrollment

BOU student enrollment in different programs is dramatically increasing since its operation in 1995. The students enrollment from 1998-2003 (Anonymous 2002) in different programs (Fig. 2), suggest that BOU certainly exists as one of the mega-universities in future and will take the responsibility for educating the mass people of Bangladesh (Fig. 1).

If it is possible to improve the socio-economic conditions and ICT infrastructure of the country, introduction of interactive e-learning could boost DE and directly contribute to the development of Bangladesh.

COMMON PROBLEMS OF E-LEARNING

Although e-learning in the universities and educational institutes of the developed countries are getting popularity day by day, it is still a dream for the less developed countries because of poor ICT infrastructure and other socioeconomic reasons. Due to very high primary cost for infrastructural development and to increase public access to internet and other ICTs, the developing countries are still far behind from getting benefit from the e-learning. The main points that should be considered before introducing e-learning in the developing countries are briefly discussed below:

Reliability of technology

Until technology becomes more reliable, the democratisation of e-learning will be difficult.

Stability of technology

The rapid evolution of the technology is another source of concern for both e-learning providers and learners.

The interface and its ease of use

Today's best technology is not up to the level of new users' expectations. If keyboard literacy remains fundamental criterion for accessing e-learning, only a small part of humanity will be able to profit from it.

Cost of equipment and access

The marketplace has in the past five years been very sensitive to the cost of equipment and access to networks.

Maintenance costs & infrastructure

E-learning depends on hardware and software infrastructures or platforms that require constant attention.

Direct cost

One of the major issues in a period of technological and cultural metamorphosis is estimating and managing the direct costs to determine whether the investment required is worthwhile.

Conversion costs (equipment, skills)

Because of the general state of technological and economic flux, planning the implementation of new systems and skills is a precarious exercise.

PROSPECTS FOR E-LEARNING IN DEVELOPING COUNTRY

Great strides have been made over the past few years in enhancing the capacity for e-learning and finding ways to broaden its exposure. The move to e-learning has been assisted on the demand side by high access levels to computers and the internet in many other countries such as Australia (Gallagher 2001).

The e-learning has several advantages in promoting distance and open learning. Some of the important points are listed below:

- Internet connections are very few, this model has high potential to attract large crowd, which helps to entrepreneur to be a part of e-learning.
- People can learn what they need to learn and go at their own pace.
- High quality Internet infrastructure and networking will help to deliver high quality courses. CD-ROM training now offers movie-quality lectures by famous Professors that include a variety of quizzes and exercises.
- Computers with high internet infrastructure will help to reduce the overheads as there won't be any recruitment, training, and up gradation of faculties.
- Due to socio-economic conditions, large number of students still avoids schools; e-learning may involve them in studies.
- E-learning provides the courses round the clock *i.e.* 7 days a week and 24 hours a day, which further attracts working peoples, students and even individuals.
- The courses provided in this model are having wide variety of courses based on IT and non-IT topics, which is an additional benefit to attract the large crowd from all the background.
- The learners need not pay any additional amount for any up gradation on the courses once being a member. This saves learners times and cost.

CONCLUSION

In order to survive, the Higher Education Institutions of the 21st Century will increasingly rely on various forms of electronic delivery and communication inside a market place that requires education to be flexible. E-learning is now widely used in most of the developed countries to promote distance education (DE) and life-long learning in an effective way (Hirumi 2002). In Bangladesh, the recent developments and awareness of the Government on ICT have opened an opportunity to adopt e-learning to deliver distance education for educating mass of its uneducated or less educated peoples. Considering the recent expansion of ICTs in the country, BOU could introduce some modern ICTs like e-mail, web-based learning (*e.g.*, open coursewares), CD-ROM for delivering its course-materials through e-learning for its advanced learners. However, before going to introduce an advanced ICT in BOU, it is suggested to perform enough research on student access, cost and other related parameters essential for it.

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