e-Learning for Expanding Distance Education in Tertiary Level in Bangladesh: Problems and Progress

Md. Abdullah Al-Masum [a, *] and Saiful Islam Chowdhury [b]

[a] Department of History, University of Chittagong, Bangladesh

[b] Institute of Modern Languages, University of Chittagong, Bangladesh

Abstract: E-learning has broadly become an important enabler to promote distance education (DE) and lifelong learning in most of the developed countries, but in Bangladesh it is still a new successful progressive system for the learning communities. Distance education is thought to be introduced as an effective way of educating people of all sections in Bangladesh. Bangladesh Open University (BOU), the only distance education provider in Bangladesh, has been trying to adopt the use of various e-learning materials for its distance delivery. This paper has tried to describe the current progress of quality e-learning for expanding distance education, identifying the major problems of e-learning in distance education at tertiary level in Bangladesh, with special reference to BOU, and finally to put forward some valuable recommendations for solving the problems. The study is based on both primary and secondary sources. It is observed from the research that e-learning is going to ensure its bright prospect as an alternative mode of education at the tertiary level in Bangladesh. There are several problems that are identified and can be mitigated and solved through Information and Communication Technology (ICT) development, greater acceptance by learners, and much research in this sector in Bangladesh to face globalization.

Keywords: e-learning, distance education, tertiary level education, Bangladesh

Introduction

Bangladesh is a highly populated (142 million) low income country struggling with huge poverty (Bangladesh Bureau of Statistics, 2011, p.3), needing a big push toward better socio-economic performance of the country (World Bank, 2010, p.83). This is not possible without improving the human capital position of the country. Due to the seat limitations and inflexibility in space and time at the traditional educational institutions, only a small number of people can gain education. Encouraging distance and open learning systems can help to solve this problem. Successful accomplishment of distance education at the tertiary level depends on successful delivery of contents, courses, and instruction via electronic media, including the Internet, intranets, extra-nets, satellite broadcast, audio/video tape, radio, interactive television, and multimedia CD-ROMS. This study

illustrates technological, psychological, socio-cultural, and economic factors that would affect successful implementation of distance education for tertiary level studies in Bangladesh. In spite of socio-economic constraints, information and communication technologies (ICTs) are rapidly expanding in the country, and thus offering a new scope for the use of e-learning for the promotion of distance education. This paper focuses on different issues that stimulate successful e-learning practices for expanding distance education at the tertiary level in Bangladesh.

Objectives of the Study

The specific objectives of the study are as follows:

- To focus on the current progress of quality e-learning for expanding distance education at the tertiary level in Bangladesh.

- To highlight successful implementation with examples of e-learning concepts in distance education.

- To identify the problems of e-learning in distance education in tertiary level in Bangladesh and to recommend solutions for the problems.

Methodology

To fulfill the above objectives of the study, the researcher has used primary and secondary source materials on e-learning for distance education programs in Bangladesh, especially in BOU. As for primary sources, the researcher has examined and analyzed most of the official records and printed materials related to e-learning for distance education in BOU. To solve the problems under the present study, opinions from IT experts and e-learners in different institutes have been considered. In addition, various secondary sources in the form of articles in the professional, national, and international journals; study books; and websites have been used.

Findings and Discussion of the Study

Recent Progress of e-Learning for Distance Education

In Bangladesh, e-learning was first introduced as early as the 1960s. It began with the distribution of 200 radio receivers throughout the country, which led to the creation of an Audio-Visual Cell (AVC), and later the Audio-Visual Education Centre (AVEC) in 1962. In 1978-1980, a pilot project entitled 'School Broadcasting Program (SBP)' was undertaken. In 1983, the SBP and AVEC were merged to form the National Institute of Educational Media and Technology (NIEMT). In 1995, the Bangladesh Institute of Distance Education (BIDE) was established and NIEMT was incorporated into BIDE. In 1989, as per the request of the Government of Bangladesh, the Asian Development Bank (ADB) sent a 'fact finding mission on open university' to Bangladesh. Then, a feasibility study on an open university was conducted through a 'Technical assistance Project (TAP)' under the assistance of ADB (BOU, 2004). In the end, Bangladesh Open University (BOU) was established in 1992 by an Act passed in the Bangladesh National Parliament (Bangladesh Gazzette, 1992). BIDE merged with it. BOU came under government budget in 1999 with a condition that it would generate sufficient revenue for its

survival. Its prime objective is to transform the country's vast human resources into an educated and trained work force by extending to them a wide range of academic programs both formal and non-formal by using different delivery technologies (Bangladesh Gazzette, 1992). BOU provides tertiary education and professional training in wide areas, such as agriculture, business, education, arts, science, and technology. The BOU has set up 12 regional resource centers (RRCs), 80 local centers (LCs), and more than 1000 tutorial centers (TCs) throughout the country (BOU, 2004). By 2002, BOU offered a total of 230 courses of study over a period of two-terms: Term-I (January-June) and Term-II (July-December) by distance education. BOU mostly depends on the correspondence model-print based delivery technology, and non-print delivery technologies are used as a supplementary component of print based delivery. It introduced several formal academic programs from Certificate to Master's Levels under six academic schools (see Table 1).

Present enrollment at BOU is 378,382 (see Table 2). This number is higher than the total enrollment of all traditional universities in the country (see Fig.1). It is noted that during the starting period of BOU, the total enrolled student was only five thousand in 1992. It is revealed that BOU education is superior to all other public universities in Bangladesh in terms of cost per student, male-female and teacher-students ratios, and income from the own source of the total budget (University Grant Commission [UGC], 2010, p. pp.15-16, 44, 130).

The mode of teaching is very significant for distance learning. Mixed approach uses several different media methods or deliveries, such as video and e-mail, compared to single mode which is one delivery method in BOU. According to Hirsch Buhl, Jackson, and Bishop (1995), "...single mode delivery systems do not provide enough instructional power to ignite the student's interest because they fail to provide student involvement". As a distinct mode of imparting education, BOU relies heavily on print materials, electronic media like radio-television and audio-video cassettes, and face-to-face tutorial services. 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. Considering the rapid expansion of ICTs in the country, BOU should introduce more electronic media like CD-ROM, e-mail, and internet for its advanced learners (Table1). 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. In such a situation, efforts are underway to introduce video conferencing and web-based materials for distance delivery in BOU. It is also important to mention that BOU is now supplying audio and video materials as supplementary component to most of the programs (Hossain & El Saddik, 2003; see also Kamal & Sultana, 2002). So, BOU could easily create copies of those recorded programs on multimedia CDs and add with respective pack up of course materials (Table 1).

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 the Asian Development Bank during the project period in 1992-1998. (BOU, 1998).

Table1. *BOU Academic Programs, Style of Current and Proposed*

| School | Formal | | Level | Media used | |
	Programmers			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, EM
	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, OCW EM
	4. Commerce in Executive MBA/MPA		Master	Pr,TV,R	EM, OCW
School of Agriculture &	1.Certificate in Livestock and Poultry (CLP)		Certificate	Pr,TV,R	CDR,VC
	2. Certificate in		Certificate	Pr,TV,R	CDR,VC

Rural Development	Pisciculture & Fish Processing			
	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	Certificate	Pr,TV,R,AC	CDR
	2. Certificate in English Language Proficiency	Certificate	Pr,TV,R,AC	CDR
	3. Bachelor of Arts/ Bachelor of Social Science	Bachelor	Pr,TV,R	CDR,EM
	4. Bachelor of English Language Teaching	Bachelor	Pr,TV,R	AC, VC, EM
	5. Master in Education (M.Ed)	Master	Pr,TV,R, CDR	EM
School of Science& Technology	1.Deploma in Computer Science and Application (DCSA)	Diploma	Pr,TV,R	VC,EM,OCW
	2.D.SC in Nursing	Bachelor	Pr,TV,R	VC,EM

Source: BOU (2011), Student Support Service Division Record.

*VC= Video Cassette; AC=Audio Cassette; Pr=Print; TV= Television; R=Radio; OCW=Open Course Ware; CDR = CDROM; EM=E-mail.

Table 2. *Program-Wise Total Student's Enrolment of BOU in 2010-2011*

Schools	Name of the Program	Total Enrollment
School of Education	M. Ed	2,761
	B. Ed	6,389
	C. Ed	1,067
Open School	SSC	1,48,219
	HSC	1,01,794
	BBS	533
School of Agriculture and Rural Development	BA/BSS	1,11,467
	CELP	22
	CALP	135
	BELT	35
	4 Years Bachelor Degree	286
School of Agriculture and Rural Development	B.Ag.Ed	2,601
	CPFP	41
	CLP	129
	DYDW	0
School of Business	PGDM/CIM	61
	BBA	1725
	MBA	248
School of Science and Technology	CEMBA/CEMPA	312
	DCSA	443
	B. Sc in Nursing	114
Total student enrollment		3,78,382

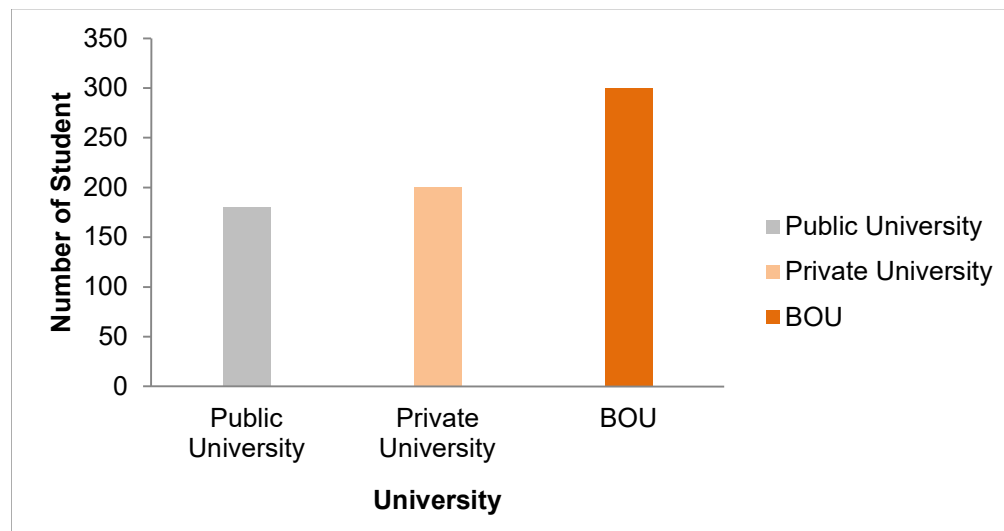Source: BOU (2011), Student Support Service Division Record.

Figure 1. Comparative data of students enrolled in different types of universities. Source: University Grants Commission [UGC], 2010, p.127-130.

Successful Implementation with Examples

Bangladesh, being a developing country, has had some progress in using technologies for e-learning, but is far away from using online delivery technology for distance education (Table 1), which is adequately done in the different developed countries (Islam & Selim, 2006). Personal computers in the country 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 (Islam, 2011). As a result, modest progress has been made to admit students in BOU. It is also noted that, since its establishment, enrollment of students in BOU was rapidly increasing, which justifies the high demand of tertiary education and acceptance of distance learning in Bangladesh (Islam, 2007; Rahman, Shah, Alam, & Alam, 2005). Again, face-to-face instruction in the classroom is known as the best teaching practice, which allows more room for interactions between learners and teachers in BOU. Therefore, the rate of success in face-to-face teaching is always high (see Japan External Trade Organization [JETRO], 2004). BOU's evaluation system is very strict and similar to conventional universities, which also urged a similar statement regarding the successfulness of BOU as an example (Islam, 2010). It is observed that the average passing rate in the examination of students at conventional public universities ranged at the tertiary level from 80-95%, while in BOU the passing rate was almost the same (University Grant Commission, 2010).

Professional affiliations of BOU students are very diverse, from top-ranked government officials to bottom level workers, or unemployed youths or housewives. The number of rural students is higher than urban. Most of the students opined that BOU should take appropriate measures to introduce more flexible tools for facilitating e-learning and publish results of examinations within the academic calendar. It is also observed that a high rate of female participation and success rate in the tertiary level is positively significant (BOU, 2011). On the other hand, various media like TV, radio, newspaper, and recently mobile, are increasingly

popular and contributing to accelerate the quality e-learning concepts in Bangladesh. As Mahmud (2009) observed, Bangladesh Open University, with a current enrolment of 378,382, may be regarded as a mega university compared to universities in the developed world (such as Malaysia, China, India, United Kingdom, etc.), and undoubtedly this has been a great example of successful implementation of e-learning concept. So, it can be said that there are huge opportunities and scope to use online technologies for rapid expansion of e-learning for distance education in the country.

Major Problems of e-Learning in Distance Education

Although e-learning for expanding distance education in Bangladesh is becoming more popular with learners each day, it is still far from gaining the mass level benefits of e-learning. Based on the researcher's observations and experience, the major problems, which are identified for quality e-learning in distance education at the tertiary level in Bangladesh, are discussed below (see also Kamal & Sultana, 2002; Mahmud, 2010).

- Lack of faculty resources in quality e-learning for distance education. The study identified that most of the key positions at BOU are occupied by people familiar with conventional institutions. A tendency toward the 'Conventionalization of the Distance Learning System' is observed sometimes.

- Access to ICT is very limited in Bangladesh because of economic constraints. Many students do not even have access to electricity, telephone, radio, and television, which makes the use of ICT still a dream. That's why, for many students, access to a PC at the workplace or at home is not viable at the present time.

- Lack of proper coordination in quality management of e-learning for distance education is another vital problem.

- Delay in production of e-learning materials and their proper delivery is marked as a vital problem in the context of Bangladesh.

- Financial difficulties faced by parents; absence of infrastructure, such as electricity and telephone lines in many parts of the country; and lack of funds and other resources at universities to improve their computer laboratories are also major impediments to the introduction of new technologies that require substantial capital investment.

- Higher research and evaluation activities are very limited in terms of quality e-learning for distance education at BOU.

- Due to unavailability of Internet and low bandwidth, very few learners can use the Internet on a regular basis.

- Government sponsorship is much lower in BOU than in any other university in Bangladesh.

Recommendations for Solving the Problems

The researcher, besides pin-pointing the impediments to the development of quality e-learning for expanding distance education, have put forward some viable recommendations to solve the problems.

- An initiative should be taken by the Bangladesh government to set up a national content development center. This center can serve to coordinate content development in the country, act as a repository for quality e-contents, train and develop e-content experts, develop and monitor e-content standards, and promote knowledge sharing among e-learning providers.

- Technology-related activities should be made an integral part of higher education, which would provide opportunities for students to interact with resources that they might use later. Teachers must try to combine traditional instruction with the ICT-based education so that students view technology with a more positive attitude.

- Accessibility and connectivity needs to be further improved for the expansion of quality e-learning for distance education at the tertiary level.

- Improvement of infrastructures of ICT and introduction of schemes to provide computers at affordable price should be a prerequisite for e-learning.

- Realizing the widespread use of mobile devices in Bangladesh, one of the ways to accelerate the acceptance of e-learning is to influence the use of mobile technology to support mobile learning. Mobile learning will also help overcome the problem of accessibility and connectivity.

- It is suggested that higher secondary schools and universities should take steps to impose computer literacy among all teachers and students prior to introducing e-learning and distance education.

- It is necessary to take initiatives to overcome problems related to technological, psychological, socio-cultural and economic factors that would affect commencement of e-learning in Bangladesh.

- The feedback from students should be taken into account continuously while designing and implementing the ICT-based education, which results in students' better appreciation of the purpose of introducing ICT into education.

- Extended public support in audio-visual media use. Government should allow BOU to use a separate television channel or a generous time slot (4-5 hours a day) in the national TV and radio channel.

Conclusion

E-learning and distance education is now a reality in Bangladesh which can enhance the educational level of its large population. The study pointed to several major reasons with solutions to properly promote e-learning for distance education at the tertiary level in Bangladesh. Lack of

motivation to learn the new technology, coupled with the very conservative anti-technology attitudes and lack of confidence to practice computer applications, are the most difficult issues facing distance education in Bangladesh. Poor levels of competency among the students and teachers, and financial deficiency faced by parents and learners, absence of infrastructure such as electricity and telephone lines in many parts of the country, and lack of funds and other resources at universities to improve their computer laboratories are also identified as major impediments for e-learning in distance education. In spite of different obstacles of distance education, recent developments and Government awareness of ICT have opened an opportunity to adopt quality e-learning at the tertiary level. Considering the recent expansion of ICTs in the country, BOU could introduce some modern ICTs like e-mail, web-based learning (e.g., open courseware), and CD-ROM for delivering its course-materials through e-learning for its advanced learners.

However, before introducing an advanced ICT in BOU, it is suggested to perform enough research on student access, cost, and other related parameters essential for its success. To scale up quality e-learning for expanding distance education at the tertiary level, conventional universities should also introduce academic programs through distance mode in parallel with traditional face-to-face classroom instruction. Again, BOU should not forget the valuable statement attributed to Sir John Daniel, "...can we have quantity with quality. It is the right time for BOU to introduce more flexible e-learning using modern ICT including mobile phone in combination with current delivery methods" (Daniel, 2009).

Bangladesh is currently connected to the information super-highway through submarine cables, which will add a new spin in the expansion of Internet and other electronic communications. More than 20 million mobile phone users throughout the country reflect the real phenomenon of quick acceptance of modern ICT by the people. Private TV channels have also started interactive live non-formal educational programs for increasing public awareness in health and other affairs. But, the full potential of the ICT infrastructure is yet to be exploited by BOU and other institutes that are committed to the promotion of distance e-learning. It is expected that the current improvement of the ICT infrastructure of Bangladesh may promote e-learning for distance education at the tertiary level in Bangladesh. This is in accordance with Sheik Hasina, the current Prime Minister of Bangladesh, who expressed a vision of "Digital Bangladesh" by 2021 to accomplish a knowledge-based society that realizes the power of e-learning for all the people in the country.

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