Meeting the Students' Needs of Bangladesh Open University with the Implementation of New Technology

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Abstract

Bangladesh Open University (BOU) is the only university in Bangladesh which is exclusively devoted to distance education. The BOU support system for these students is intended to cater for students from diverse education and social background and locations, particularly for students in isolated and remote regions. This paper briefly describes the establishment of the BOU and considers approaches and limitations to the accessibility of new technology by the BOU to facilitate access and improving the quality of the student learning experience in a developing country such as Bangladesh.

Abstrak

Bangladesh Open University (BOU) ialah satu-satunya universiti yang melibatkan pendidikan jarak jauh secara eksklusif. Sistem sokongan BOU untuk pelajar bertujuan memberi perkhidmatan kepada pelajar yang terdiri daripada pelbagai latar belakang pendidikan, sosial dan lokasi, terutama kepada pelajar yang terletak di wilayah yang terpinggir dan terasing. Artikel ini menerangkan secara ringkas pembentukan BOU dan mempertimbangkan pendekatan dan kekangan kepada kecapaian teknologi baru oleh BOU untuk memudahcarakan kecapaian dan mempertingkatkan kualiti pembelajaran dalam kalangan pelajar di sebuah negara membangun seperti Bangladesh.

Introduction

Open and distance mode of learning is a relatively new concept in Bangladesh and the common people are still not fully acquainted with this concept. Distance education in Bangladesh was initiated in 1985 at Bangladesh Institute of Distance Education (BIDE) as a means of improving school teachers' knowledge and skills. In 1989, the National Policy on Education categorically stated that the future thrusts would be in the direction of open and distance learning system in Bangladesh (MOE, 1989).

It is believed that development of the nation depends to a great extent, on the development of human resources (Kabir et al., 2000). Accordingly, open and

distance education is considered within Bangladesh to be an ingredient and an important tool for human resource development (Rumble, 1999; Dekkers & Rahman, 2000). For example, the changing patterns of training and learning needs within Bangladesh for business and computing studies is a typical reason for the need for open and distance education programmes.

The role of open and distance education in human resource development in a developing country such as Bangladesh is vital as it aims at the democratisation of educational opportunities to all those who are knowledge seekers (Cochrane, 2000). With the population of Bangladesh growing at a rate of about 2% annually there is a demand for an education system, which can bring learning particularly to people in small and isolated villages. This is because over 70% of the population in Bangladesh live in the remote areas. Many of these people are involved in business or agrarian sector and have not had adequate access to formal education and therefore can benefit considerably from access to open and distance education courses (Ali, 1995).

This paper considers approaches and limitations to the accessibility of new technology to facilitate access to open and distance education.

Bangladesh Open University Context

The broad aim of the BOU is to provide flexible and needs-based education to those unable or not willing to embark the conventional educational institutions (GOB, 1992; ADB, 1992a; ADB, 1992b). The establishment of the BOU in Bangladesh introduced open and distance learning as a means of providing education for people in isolated and remote locations (BOU, 1992). Thus the Asian Development Bank's (ADB) Project Appraisal document cited the rationale for the BOU as follows:

> ...the high absolute levels of poverty, the low per capita Gross National Product (GNP), the high population growth, the low adult literacy rate, and the inability of conventional education system to meet the country's requirements, inadequate access in rural areas, inadequate higher and professional education and training opportunities, the poor quality of educational resources and programmes, and the lack of informal and non-formal educational opportunities (ADB 1992a).

It follows that the establishment of an open university was considered to 'help support the Government of Bangladesh's efforts to strengthen human resource development by increasing access to education and training in rural areas (including basic and secondary education and vocational training), provide higher education and professional training in selected areas, strengthen informal and non-formal education programmes aimed at the general population, and enhance the general quality and relevance of educational programmes' (ADB,

1992a). In this context, 'the BOU was established not only to supplement existing conventional education programmes, but also to provide a viable alternative system to meet the education and training requirements of various target groups at different levels, particularly in rural areas, and to improve the quality and relevance of such programmes' (GOB, 1992).

Given the above commentary, a main purpose for the establishment of the BOU are to strengthen the capacity of the existing education and training system, and to encourage new initiatives that will bring about a comprehensive and long-range transformation in the education and training sector. Specifically, it has been considered that there was an urgent need to:

♦ increase access to human resource development opportunities for those people currently excluded from the conventional system;
♦ increase education and training opportunities in the rural areas, particularly for disadvantaged groups including women, in such areas as basic education, secondary education, and vocational training;
♦ retrain and upgrade skills of working adults;
♦ increase the opportunities for higher and professional education and training in such fields as teacher education, agriculture, health and population studies, and in selected technologies (e.g. computer technology); and
♦ improve the quality of instruction (GOB, 1992).

Currently the BOU enrols more than 159,000 students in various programmes (Haque, 2000). The achievement of the BOU in catering for student needs in the past eight years has been considerable given the following facts at the time of its inception:

♦ the concept of open/distance education was very new to Bangladesh and open education was viewed somewhat suspiciously and considered to be inferior to the more traditional forms of education;
♦ there were very few expert trained staff in open and distance education;
♦ except for staff from BIDE (Bangladesh Institute of Distance Education), both academic and administrative staff needed to be recruited and *become experts* in the teaching and management of distance education;
♦ there were no purpose built facilities, and resources for carrying out the functions of the BOU (Dekkers, 1998).

Issues and Challenges

Open and distance education is highly challenging for the students in Bangladesh since most BOU students have never had to study on their own as instruction in schools is strongly teacher directed.

For open and distance education programmes, BOU primarily uses pre-prepared print materials (study guide and resource materials). The print-based learning materials are supported by only limited number of radio and television broadcast programmes (and/or audio cassettes) (Haque, 2000), and face-to-face tutorial sessions presented at regional and tutorial centres as described below.

Several studies have found that BOU academic and administrative support system has a number of limitations (Rabbani, 1998; Haque, 2000; Hossain, 2000; Hossain & Islam, 2000). These limitations are as follows:

* There is limited scope for student-teacher and student-student interactions other than the student-content interactions.
* There is a limited range of television and radio programmes to support study materials.
* A further issue is that the provision of open and distance education by the BOU have generally been modelled on experiences from established open universities such as the UKOU. As a consequence, it appears that the support system does not adequately caters for students' learning needs and requirements. For example, the current student material (guides) for each course that has been developed by the BOU, the standard of which is high in many cases in comparison to that of well-established open universities, *'has given little consideration as to how students in Bangladesh best learn through open education'* (Dekkers, 1998).

Rabbani (1998) has highlighted a number of problems of the BOU support services for distance education students. These include:

> ...excessive time spent in introducing programmes, failure in keeping to schedule, lack of proper monitoring, lack of supervision of programmes, delay in distribution of study materials and publication of results; high cost of learning materials and non-accessibility of the learners to radio and television, etc. and unfamiliarity with open learning system, negative attitude towards BOU, low rate of literacy (Rabbani, 1998).

Regarding appropriate support for distance education students in their local circumstances, Hossain (2000) has also noted that in the BOU Bachelor of Education (B.Ed.) programme:

> ...the faculty members failed totally to convince their distance learners as well as tutors that tutoring in distance education is different from class-room teaching sessions in a face-to-face teaching system... A number of audio and video programmes on micro teaching, the use of teaching aids, and other relevant topics were recorded and broadcast repeatedly but the faculty failed to link the printed lessons with these broadcasts. As

regional centres of BOU took time to become established, the tutorial centres and their tutors retained significant influence on the learners during the nineties when technological advances, which could have been utilised, were occurring rapidly. Under this circumstances *'studying at one's own pace and with self-enhanced motivation'* was not an appropriate message for many learners (Hossain, 2000).

The forgoing suggests that, student support services need to use more two-way communication (Pascual et al., 2000). However, at the present time, the only scope for two-way communication in this system is at the tutorial sessions. These are provided twice a month and enable students to discuss their study problems with an assigned tutor (Rumble, 1999). Although tutorial sessions provide limited scope for student-teacher and student-student interactions (Dekkers, 1998), there is a huge *psychological* or *transactional* distance involved in this system (Moore, 1990). This is because the 'tutor is often part-time appointee of the University and is usually not the person who designed or developed the course or even have the sense of ownership of the course or even who recognises learner achievements' (Haque, 2000). It has also been noted that the tutor tends not have the sense of ownership of the course and cannot respond appropriately to learners needs (Dekkers & Rahman, 2000).

Another aspect that needs to be addressed is that the pre-prepared study materials for the programmes, though claimed as self-instructional, are not always based upon needs analysis and self-instructional principles. Therefore, they may not be appropriate enough to meet individual learner needs.

The foregoing indicates that, as a whole, open and distance education programmes of BOU are highly challenging for students, as there is limited provision for student support in delivery and back up mechanisms. As may be expected, this situation has resulted in high-level student dropout and course discontinuity or deferral by students. The implementation of new technology offers the opportunity to reduce the gap of two-way communication for students at the BOU and this may result in improved student retention rates.

Strategy and Approach to the Implementation of BOU Courses

During the establishment of the BOU, the planners, foundation staff and consultants needed to address a range of critical questions and issues including the following:

♦   what approach to open learning best suit Bangladesh students,
♦   what form(s) of student support is (are) needed for BOU students,
♦   how can the student support system best cope with cultural, social, economic and demographic factors operating within Bangladesh, and

♦ what communication technological applications can be used in the provision of open learning in Bangladesh that will improve the quality of the student learning experience and extend access?

Answers to these and related questions were not known at that time, nor was time available to research them. The implementation of the BOU's functions was strategically guided by three major inputs. Firstly, planners and foundation staff were guided in the establishment of the major BOU functions by documentation and reports associated with the case for the establishment of the BOU (MOE, 1989; BOU, 1992; GOB, 1992). The BOU Act (1992) prescribed the mode of teaching and the use of Regional Resource Centres (RRCs), Tutorial Centres (TCs) and Local Centres (LCs) for student support and administrative functions and was designed to *contact between students and the institution* (Rumble, 2000). The analysis surveys and related reports provided details of the characteristics of the potential clientele (students) for BOU programs (BOU, 1994). These surveys revealed that:

♦ A relatively high proportion of people in rural and remote areas needed access to higher education and professional development courses.
♦ Many people seeking further education would have relatively limited resources for study.
♦ Many people would have limited access to a library and other information sources.
♦ A majority people would have access to radio and TV.
♦ A majority of potential students would have no access to information communication technologies within their community (e.g. computers, fax, and e-mail services).
♦ Postal services for most students would be relatively slow and unreliable.
♦ Many potential students would have low motivation and available time for study, particularly in rural areas.
♦ Nearly all-potential students would have no or limited experience as independent learners.

Secondly, through the ADB (1992a) funds the BOU was able to obtain consultants' advice and assistance on a range of its functions during its establishment phase, which ended in 1998. Thirty-nine individual consultancy reports were produced. In context, these reports provided the BOU with a rich source of information, guidance, advice, wisdom and recommendations on a range of facets of distance education functions. However, the vast majority of the reports addressed aspects related to the establishment and/or improvement of BOU operations and functions.

Thirdly, funds were made available to enable the majority of BOU staff (academic and administrative) to obtain overseas development and training in countries such as Australia, Canada and the United Kingdom. This experience provided opportunities for staff to familiarise themselves with alternative approaches to distance education provision.

Finally, the increased availability of new technologies, that is computers and the interactive communication technologies (TV and radio programmes, face-to-face contact, video and audio conference, on line education), have the potential to solve a number of problems and issues associated with the provision of distance education in Bangladesh. Particularly for those courses that are largely based on the extended use of print-based resources for student learning and provide only limited opportunities for student-student and student-staff interaction. So, it is better to consider the reasons for using new technology and then addresses three aspects concerning the use of new technologies for open and distance education in Bangladesh.

Considerations in the Use of New Technologies

It is recognised that no single medium can be effective for all kinds of learning needs and that each technology has its own strengths and weaknesses (Andrews, 1996). Furthermore, the socio-economic, political, cultural and geographical background of learners can influence their ability to learn through the use of different forms of technologies. It follows that a range of factor needs to be taken into consideration when deciding upon the use of any one of the available technologies for course delivery and other purposes. These include affordability, access and the unique pedagogical characteristics of the particular technological application. A number of these issues, in the Bangladesh context, are briefly considered.

Affordability and Access to Learning

Based on census data (GOB, 1998), approximately only 40% of the population are in the age group of 6-20 years old can afford and/or have access to appropriate learning facilities and resources for education. In the case of University-based education only approximately 3% of the people have access to a University on-campus education (BOU, 1996). The establishment of the BOU has improved this situation and now accounts for approximately 50% of all university students in Bangladesh. However, with respect to using technology, a major problem confronting the BOU in its use for education and training purposes is, partly, the relatively low household access to electronic media as shown in Table 1. It is noted that whilst household connection for TV and radio is very low, these media tend to be frequently accessed in community

centres. The low level of home electricity connection in rural areas which comprises nearly 2/3 of the Bangladesh population is more concerning however, as this can severely restrict education and training activities in the home environment (Dekkers & Tarafdar, 2000). It follows that the low level of ownership of receivers for communication in Bangladesh is a problem for the rural students. Data presented by World Almanac in 2001 showed that the access to a television receiver differs greatly between urban areas and rural areas (Table 1). The table also shows access to communication in the South Asian Association of Regional Cooperation (SAARC) countries that Bangladesh has fewer television and radio sets per capita except for Bhutan and fewer telephones than any of the other six countries (World Almanac, 2001).

Table 1 Access to communication media in the SAARC region

Media	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Television	200	-	15	53	83	16	11
Radio	16	37	8.5	10	33	11	5
Telephone	342	170	47	14	122	47	37

Note: The figures refer to the number of individuals per receiver per capita.
Source: World Almanac, 2001.

Clearly communication media such as televisions are unlikely to reach many BOU students. Furthermore, the wide disparity between urban and rural access suggests that BOU students in rural area have extremely limited access to television. Nevertheless, there is relatively good access to radio in the rural areas but usually only to local radio stations which unfortunately the BOU does not currently have access to (Ali et al., 1997).

Institutional Resources and Support for the Use of Technology

In the establishment of the BOU, provision was made to incorporate the use of various media/technology for administration and student support functions. The academic schools draw extensively on seven administrative divisions for teaching, course materials development and related support. These divisions are: Media, Printing, Publishing and Distribution, Computer, Library and Documentation, Examination, Student Support Services. A Student Support Services Division has the responsibility to liaison with students in formal and non-formal programmes through the BOU network of centres scattered all over the country with at least one in each Thana headquarters (local administrative unit). In summary the BOU network of centres comprises of RRCs, LCs and TCs. The RRCs carry out all activities connected with admission of students,

distribution of books and other study materials, arrangement of examination centres, announcement of examination results and other promotional activities. The LCs provide some administrative support but these centres serve little to the student. The TCs provide tutorials and use for examination centres. Concerning other aspects of the student support system, a Media Division is responsible for the production of broadcasting of TV and audio-visual educational programmes in an arrangement with Bangladesh Betar (Radio) and Bangladesh Television whilst a Publishing, Printing and Distributing Division is responsible for the printing and publication of texts, course materials and their distribution through RRCs.

Availability of Technology at BOU for Delivery (Support Service) System

The use of ICTs through the BOU network of centres can potentially minimise the interaction gap between students and the University academic and administrative staff. Table 2 shows the technologies presently used in BOU programmes. This technological base is considered by the BOU to be the foundation for more advanced educational technology applications such as dial access (Educational Telephone Network [ETN]), interactive video, computer mediated education such as on-line course delivery and, CD-ROM applications. The selection of the various media has been quite deliberate.

Table 2 Media and technological support for BOU programmes

BOU Programmes	Print Media	Audio	Video	TV	Radio	E-mail/ Computer
Bachelor in English Language Teaching	✔	✔	✗	✔	✔	✗
Certificate in English Language Proficiency	✔	✔	✗	✔	✔	✗
Certificate in Arabic Language Proficiency	✔	✔	✗	✔	✔	✗
Bachelor of Art (BA)/ Bachelor of Social Science	✗	✗	✗	✗	✗	✗
Graduate Diploma in Management	✔	✔	✗	✔	✔	✗
Certificate in Management	✔	✔	✗	✔	✔	✗

(continued)

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BOU Programmes	Print Media	Audio	Video	TV	Radio	E-mail/ Computer
Master of Business Administration (MBA)	✔	✕	✕	✕	✕	✕
Bachelor of Agricultural Education (B.Ag)	✔	✔	✔	✔	✔	✕
Certificate in Livestock and Poultry	✔	✕	✕	✕	✕	✕
Cert in PC Culture and Fish Processing	✔	✕	✕	✕	✕	✕
Diploma in Youth Development	–	–	–	–	–	–
Secondary School Certificate	✔	✕	✕	✔	✔	✕
Higher Secondary Certificate	✔	✕	✕	✔	✔	✕

♦ Each of the media is an alternative way to facilitate and assist student development as independent learners. A need to provide face-to-face contact through RRCs, TCs, and LCs was considered crucial for student success.
♦ Each of the media has its own strengths and weaknesses. For example, TV is very effective for teaching/learning, requiring pictorial or graphical illustrations, whereas print material is very effective and cost-efficient for the transmission of detailed information.
♦ Use of the different media can help reinforce learning. TV and radio, whilst very effective for student motivation, also have important roles in the promotion of BOU programmes and student recruitment.

Discussion and Conclusion

The establishment of the BOU in 1992 occurred in a setting in which there was limited open and distance education expertise in Bangladesh, limited infrastructure (facilities and resources) for the administrative and academic functions for the BOU, and no initial student support system. The foregoing has alluded to the fact that like any new educational enterprise, the establishment of the BOU has not been without its problems. Nevertheless, that the implementation strategies developed and used by the initial planners and

administrators have provided the appropriate foundations for the BOU's long-term goals that include the extensive use of ICT's that could make possible increased opportunities for interaction between students and staff in the learning process and for other communication purposes. The fundamentals adopted included the following:

♦ Using a needs analysis to identify the BOU users and types of programmes that should be offered by the BOU.
♦ Using TV and Radio programmes for programme delivery.
♦ Establishing a student infrastructure of RRCs, TCs and LCs, particularly for rural and remote students.
♦ Using technology to enhance the student educational experience.
♦ Using consultants to provide advice and expertise in aspects of open and distance education systems and functions.
♦ Making extensive provision for staff development and training.

Concerning the use of different media/technologies, the BOU to date, has adopted an approach to only use media and technologies where they can have the greatest benefit to its staff and students and have taken into account cost effective. Further interrelated reasons for this approach are:

♦ The BOU central campus has only recently been fully established. This will now enable BOU to begin to more fully develop electronically based administrative support systems for a number of the BOU functions. The BOU is in the process of implementing a Student Information Management System (SIMS) for the management and operations of enrolment processes, examinations, etc.
♦ The BOU network of RRCs, TCs and LCs is not yet fully established to enable a wide range of student, academic and administrative support functions.
♦ Up to the present time, the BOU does not have a critical mass of expertise and resources to make extensive use of information technologies, and computing systems.

The BOU is now in a position to explore the potential of ICTs to improve opportunities for increased student-staff interaction, especially for students in remote and isolated regions. In this respect, the student support infrastructure of RRCs, TCs and LCs will have an important role. This infrastructure will ultimately serve a crucial role in enabling students in rural areas to access computing facilities and the interactive technologies as many of these students do not have access to electricity, let alone telephones and modems. Furthermore, very few students would have access to a PC. In these circumstances, the centres will become locations for student access to arrange

ICTs, e.g. audio and video conferencing facilities, computers (and CD-ROMs) and enable participation in computer mediated learning via the Internet-this notion is akin to Internet or cybernet cafes which are increasingly a common mechanism for people in isolated communities to access the Internet (One World, 2000). It will also enable students, with the assistance of tutors or centre facilitators, to gain access to other tutors (at the BOU campus or elsewhere) and access information sources not otherwise available.

Only more recently have RRCs begun to be networked to the BOU main campus. A major problem faced by the BOU has been an inadequate telecommunication network in rural and regional Bangladesh communities - access to digital networks are necessary. Nevertheless, progress is being made in establishing a computer network, along with fax and e-mail facilities to RRCs and the main campus, with a long term view of extending this to incorporate TCs and LCs. Further difficulties and challenges that still need to be overcome to result in greater use of computers and ICTs include:

- The need to have a larger nucleus of staff with appropriate computing and Internet skills (academic and administrative).
- The need to have more technical experts and support staff for networking ICT initiatives.
- Staff expertise in development of computer based mediated teaching/learning resources.
- Student skills in using technologies.
- Appropriate teaching/learning models in the Bangladesh context for using ICTs.
- Funding support.

These challenges and others are not so different to those experienced elsewhere throughout the world in both developed and developing countries.

At the present time there are only relatively limited number of developed applications for networking administrative and student support functions at the BOU as a consequence of the above barriers. However, the costs of implementation of ICT applications and systems are declining and applications are increasingly becoming more affordable for institutions such as the BOU. Furthermore, teaching and learning models and practices are being developed that are suitable for open education systems. It follows that the BOU needs to have both short term and long term plans for the use of ICTs for a range of BOU administrative and teaching functions. Thus, whilst the BOU needs to adopt a cautious approach for the implementation of ICTs an important priority should be to explore ways of using ICTs that can best meet student support needs that are not currently possible or difficult to provide. In this respect,

BOU needs to develop short term plans to establish a cadre of staff that has the appropriate knowledge and skills to provide leadership undertake planning for the use of ICTs and to undertake some pilot projects and needs analysis for ICT applications. Such an approach will ensure that the BOU will progressively make more use of ICTs for its functions.

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