

Technology Based Literacy Education Through Distance Mode in Bangladesh: Problems and Prospects

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Abstract

Bangladesh is a densely populated country with a population of 130 million. As per statistics (1999) its literacy rate stands at 56 percent. In Bangladesh the Government and Non-Government Organizations have taken a sufficient initiative to increase the literacy rate but the significant development is yet to achieve.

Sophisticated technological development in the education world changes the pattern of role and responsibility of learners and teachers and creates more opportunities of learning. Using the virtual image of the Distance Education system there emerges a new horizon of innovativeness with its unlimited possibilities to resolve a very long felt need of eradicating illiteracy and developing person resource (HRD) in the globe.

It is also potentially dynamic and flexible due to methodology and instrumentation. Technologies are used in distance education and which can create a forceful impact to accelerate mass literacy, gender balance and also help develop person resource in the pursuit of acquiring different branches of knowledge and skill along with technical and vocational aspects to meet the thirsty need of the time.

In Bangladesh there are many Non Government Organizations (NGOs), working as a partner in the literacy development as well as other socio-economic and cultural development process of the country along with other international development partners. There may be a revolutionary achievement in eradicating illiteracy if those partners in development process can be unified to collaborate with each other for working in the system of distance and open learning. This paper addresses the issues for developing strategies for technology based cost effective literacy programme. It also highlights to identify the parameters for developing a cost effective, appropriate and technology based learning resources for literacy programme describing the problems and prospects of technology-based literacy training in Bangladesh.

Introduction

Bangladesh achieved its independence in 1971 through a freedom struggle unique in the contemporary history. It has an area of 147,570 square kilometers, a population of around 130 million and a per capita income of about US\$350. Having an almost agrarian economy and visited frequently by natural calamities such as flood and drought, the country has recently attained self-sufficiency in food. But in spite of its making satisfactory progress in the field of education, its adult literacy remains yet at 56%. The constitutional commitment for establishing a uniform, mass-oriented and need based education system and extending free and compulsory education to all children, and removing illiteracy within reasonable time limit, is yet to be complied with. Considering the enormity of these requirements and fund constraints (public spending on education is just over 2% of GDP), the Government realized that the conventional system of education was inadequate to meet the demand and that there was a compelling need for exploring and introducing new modes of education and training. The realization ultimately led to the creation of a University in ODL in Bangladesh. As a result, Bangladesh Open University was established by the Act of the Parliament of the People's Republic of Bangladesh.

World wide open education systems have proven themselves as a way for people to gain an education, which would otherwise not be possible. It is well documented in the literature however, that when compared with conventional forms of education the provision of distance education requires considerable greater planning, larger up-front infrastructure costs, and more complex student and administrative support systems (Lock wood, 1995; Rumble, 1996). In this regard there exists a wealth of theories, principles and practices to guide institutions in the establishment and implementation of open and distance education systems. These

not only need to take into account specific student learning needs and circumstances but also student cultural, religious, economic and geographical factors (Keegan, 1993; Evans, 1994).

The increased availability of Information and Communication Technologies (ICTs), that is computers and the interactive communication technologies (video and audio conference, on line education, web), have the potential to solve a number of problems and issues associated with the provision of distance education courses. Particularly for those learning that are largely based on the extended use of print based resources for student learning and provide only limited opportunities for learner - learner and student - staff interaction. As such open and distance learning is becoming increasingly important in making education more mass-oriented and responsive to need with its ability to reach learners in remote areas and address the education needs of children, adults, the deprived and the disadvantaged alike. During the period South Asian Countries, aware of their responsibilities of accessible to general public, established ODL institutions to cater to their needs.

Scenario for the Literacy Education in Bangladesh

The Bangladesh has adopted a policy and declared IT as the thrust sector of the economy of the country. It has created favorable atmosphere by withdrawing customs duty and VAT from imported hardware and software. The Government of Bangladesh is supporting computer science departments of the universities and promoting IT education and development at various levels. A committee appointed by the Government. is revising the earlier IT Policy and trying to change the rules and eliminate restrictions so as to promote rapid growth of IT in Bangladesh.

Many private IT education institutions are mushrooming in the country. Youth is aspiring to build career in this field and is ready to pay high fee for good and branded education.

One of the major issue in the human resource development is the IT access to poor and illiterate; and is likely to create great divide (Digital Divide) between information-rich and information-poor.

The NGO movement in the country is very strong and over 1300 NGOs are working in various areas of development. In fact the Government of Bangladesh accords definite role to volunteerism in social mobilization and development. As a consequence, the Government. and NGO efforts, the literacy rate has been increased from 40 % in 1995 to 60 % in 2000. The Nation is planning to raise it to over 90 % in the next 5-6 years.

Distance Learning, Convergent Technologies and Literacy Training

Video Conferencing

- To achieve effective delivery of training courses to learners living in remote rural areas, training provider should consider several key factors. Firstly, they must provide high quality, easy and understandable material. Secondly, due to lack of physical staff presence, the material should be interactive. Lastly tutorial staff must offer regular, high quality learning support. There are two video conferencing configurations available arguably the most effective method of tutorial provision within open distance learning (ODL) is video conferencing.
- Analogue video conferencing employs conventional telephone lines and uses a modem to interface the computer to the network.
- Digital video conferencing uses ISDN2 and is of a higher quality than analogue systems, providing higher definition pictures and faster data transmission rates

Digital Satellite TV

Satellites and their most popular deliverable, television, are now a familiar feature of life in industrial societies. Most individuals by now are aware that global information can be easily accessed by the simple installation of a satellite antenna dish and a decoder /receiver connected to a domestic television screen.

The present applications of ODL satellite techniques is timely for a number of reasons:

- Satellite transmissions can overcome many of the previously insurmountable problems presented by delivering quality learning experiences to remote students.
- Distance is no object providing the recipient is within the beam coverage or footprint of the satellite.
- Satellite technology is extremely versatile and features a variety of delivery sub-modes including the simultaneous transmission of audio, still and moving images and data in the form of text and graphics.
- Digitization is reducing the costs of transmissions greatly.

Computer Mediated Communication (CMC)

Computer mediated communication refers to any written interaction that is generated and transmitted with the use of computer technology. It can provide a number of facilities including mail and real time chat capabilities which can be used to deliver instruction or to conduct online seminars and collaborative working on documents and projects. CMC can also be used to facilitate group discussions and to enable interactions between tutors and learners, irrespective of time and place constraints. It has been claimed that CMC can be used as a powerful tool for group communication and cooperative learning.

The Internet and World Wide Web (WWW)

The Internet is a dynamic architecture consisting of a worldwide network of computers, databases and users. It is the sum of all the public and privately owned computer networks currently connected together. It is composed of essentially five things: Computers, connections, software, data and people. No one knows exactly how many computers are connected at any particular time, or how many users are on line at any one time. This is probably because no one has enough resources to investigate effectively, and the Internet is in any case a dynamic network, changing by the hour as users come and go, and computers go on and off line.

The most common uses of the Internet are e-mail and World Wide Web access. E-mail allows users to leave messages for anyone else who has a computer connected to the Internet, and is a highly useful communication method due to its immediacy and versatility. However, it is the World Wide Web, which makes the Internet truly exciting. The Web is a graphical user interface- a software environment created specifically for use on the Internet. This is where you will find all the colourful applications, such as pictures, sound, video and animation. Web applications also enable fast linking between sites and topics. A single web page may offer a menu consisting of a dozen options, each linking to other web pages. These in turn will offer their own links and so on, enabling the user to explore almost infinitely.

Strategies for Technology Based literacy Programme in Bangladesh

There are no such types of institutions in Bangladesh that cater literacy training through ICT in Bangladesh. Bangladesh Open University is the only distance education in Bangladesh, which is offering its programme through distance mode using technology. It has wide range of network through out the country with its 12 Regional Resource Centers, 80 Local Centers and 800 Tutorial Centers. BOU has taken an initiative to provide literacy training through its network using technology. The following strategies may be taken to provide literacy training through ICT in Bangladesh.

- Bangladesh Open University (BOU) may have take the key role to provide literacy training through ICT on the basis of its past experience.
- Partnerships may be developed between NGO's and the Government institutions/ organizations at local and national level to foster and delivery of literacy programme.
- ICT based community learning centers may be established in the BOU's network system.

- IT based teaching and learning systems that is most appropriate for the literacy programme should be developed.
- ICT based approach; method and learning resources will have to develop to support the literacy programme.
- Bangladesh Open University can integrate its own strengths to support and promote literacy programme in Bangladesh.
- Materials that will fulfill the need and perceived needs of the learners and communities should be developed.
- During the transitional stage appropriate mix of the existing and available technologies should be applied, by keeping all the time in view the transformation to the utilization of newer and emerging ICT's. The ICTs should be appropriate, economical, and user-friendly linkages and intimate interactivities and remain in line with the process of globalization.
- The effect of literacy, when it leads to real learning, on quality of life and poverty is indirect and long-term. The effect can be hastened and benefits increased when literacy plus non-formal learning is linked with other development activities such as primary health care, family planning, agricultural extension and formation of self help groups. The impact on poverty can become tangible if access to credit, entrepreneurial advice and help with marketing and similar support are available to learners.

Development of Learning Resources

The learning resources will consist of

- Learning materials in the form of print, audio and video- cassettes and multi-media materials. The electronic materials could in the format of CD, tapes convenient for delivery.
- Electronic materials could also be put on the web and made accessible to learners. Content of the materials could be covering the curriculum proposed, and supportive and enrichment materials needed to support the learners in their learning aspirations.
- Expert panel of teachers and domain experts giving services on the Internet will also form learning resources
- Center and project management personnel
- Persons involved in research/development and feedback systems.

Approach to the development of the materials

Strategy proposed is not to rediscover wheel but to start from the available best teaching learning materials and adopt/adapt/transform it to the ICT enabled formats.

Following steps are proposed for development

Identification of literacy materials of quality and relevance.

- Identification of parts and units that could be transformed into IT enabled learning materials as a supplementary and complementary material in IT based education. This will involve identification of the media (CD-multi-media, audio, video, print) as well as expanded learning objectives.
- Use of the ICT based materials in the teaching and learning programmes along with a feedback on the effectiveness and efficiency of the materials.
- Transformation of the ICT based material for using it in an alternative mode of teaching learning.

Using the ICT based materials in the alternative mode for literacy group learning entirely through IT mode.

This approach allows us to have finally three modes, traditional print based literacy education (currently in practice), print supplemented by ICT based teaching-learning materials and entirely ICT enabled teaching and learning materials.

Trying the learning materials in three delivery modes will also give us the comparative results in utility and effectiveness of the ICT enabled teaching and learning both in costs and efficiency in learning.

Problems of using ICT in Literacy Programme

To describe the problems of ICT based literacy Programme the following issues should be addressed:

Technology and Moral Issues

Modern technologies are replacing the classroom domain with tele-learning. With the 'digital university', knowledge is boundless. This boundlessness may not be beneficial to all learners in countries with different socio-economic, political and cultural environments. The availability of knowledge through technology may cause serious 'indigestion' to the people of many developing countries.

Affordability

Developing countries have to accommodate or adopt technology for the sake of development. But it is now a big question whether these countries will be able to economically, culturally, socially or politically afford a globalised system of education. This may lead to two scenarios. On the one hand, if knowledge is to be imported from developed countries at a high cost, it will place strains on the budget of the dependent country. On the other hand, if knowledge costs less to produce than in the country to which it is imported, then knowledge will be colonised. This, in effect, means those who control or provide technology—will take control of aspects of the host country. Thus education will be merchandised in the global 'market economy' like other commodities.

Technological Imperialism

Human creativity in using technology will be at risk in developing countries because of their dependency upon technologically advanced countries for technology information. Thus a new era of colonisation of talents and genius will emerge. As a result, developing countries will develop less talent in this area. So, any replacement or reformation of the use of technology in developing countries needs to be harmonised socially, culturally, economically—that is ethically and morally. Otherwise the controller of technology may give birth to expansionism or 'technological imperialism'.

Socialisation and Humanisation of Technology

Once the society become a wayfarer on the information superhighway, it is not possible to get off the highway and return to the lanes and by-ways. It is known to all that technology can be a blessing for mankind. It is believed that controllers or providers have a responsibility to do justice to the underprivileged part of the world and give due consideration to ethics and moral issues.

Appropriateness and Acceptability

It is becoming clear that a cost-effective, flexible and dynamic system of education is needed to meet the growing educational needs of the society. Obviously, educational development is dependent on the invention of new technology. It is now widely recognised that no single medium can be effective for all kinds of learning needs. Each technology has its own strengths and weaknesses. One medium may serve a teaching function better than another in a particular area, and culture and learners may have different preferences for the technology to best learn

with. The socio-economic and cultural background of a person influences their ability to learn from different media technology.

There are a number of factors that need to be taken into consideration before deciding on the appropriate use of technology. These include availability and access, the unique pedagogic characteristics of each medium, instructional objectives, financial resources and personal resources.

Use of new communication technologies requires trained manpower to design, develop, produce and deliver educational material. Few developing countries have adequately trained human resources for these specialised jobs. Most people working in educational technology are required to learn the job, and the occasional training courses organised by educational institutions often fail to equip them with the adequate knowledge and skills required to perform the job more effectively.

Social and development perspective

Most of the illiterate in rural area are not familiarized with ICT. They are not friendly with technology. They are habituated in a way that providing of education should be done in conventional mode. Most of the village is not under rural electrification. So the running of technology specially computer, television, audio-video conferencing is not possible. The illiterate women in rural sometimes did not be permitted to go outside from their family to attend the literacy programme. The factors which discourage the illiterate women to attend the literacy training programme are: looking after her children, taking care of her family, poverty and ill health, social criticisms, religious barrier, lack of time and psychological factors or hesitation.

Prospects of using ICT in Literacy Programme

Technology Perspective

The IT is expanding very fast and percolating in all walks of life and work. The rate of development is so fast that those involved in IT development find it difficult to predict what is in store after a decade or two. We will therefore take a broad view of the progress in IT with a view to planning our approaches and strategies in the development and transformation of the system of training and education.

Speed and volume are increasing.

The processing power of the computer is doubling after every eighteen months and the rate of increase is likely to continue for the next two decades. Higher processing power enables one to send enormously big data within a fraction of a second. Another factor associated with the development of communication highways is bandwidth. The bandwidth is doubling after every hundred days and the development is likely to continue for a few decades more. Increasing bandwidth enables one to send voice, pictures, video etc. with a far greater speed. At present one can send text quite fast but colored pictures and video take a long time and big storage capacity.

Convergence of Technologies

The electronic technology is maturing and developing in such a way that computer, television broadcasting and telephony are getting integrated in different forms. A TV is doing computer functions and enabling Internet access. Cable TV soon will enable Internet access and telephony simultaneously. The integration of computer sciences and telecommunication sciences is creating a new communication scenario, the dimensions of which are yet to get revealed.

The digital revolution

The technology is now switching from analog to digital technology. The digital technology is far more reliable, replicable, use compression techniques, and allows sending very large data

quite speedily. The data could be recovered, corrected and reproduced very efficiently and promptly.

Internet

The Internet is becoming a common platform and channel for all types of communication. It will enable us to link individuals, institutions, and to access data from any place from various servers and websites located anywhere in the world.

Decreasing cost and increasing capabilities

The electronic devices used in Information Communication Technologies [ICT] are becoming smaller in sizes (miniaturization) better and efficient in their capabilities and getting reduced in costs.

IT Culture

The IT will bring its own culture, generated by wide spread use of it by all in all functions of living and working. The IT has its own essential and inherent characteristics. It promotes decentralization, democratization and allows openness and transparency. These very characteristics will give different value system to a new emerging society of the 21st century.

Digital divide

The new scenario is likely to create a new divide amongst people, societies and nations. The society may have IT-haves or information rich and IT- have-nots or information poor. Unless and otherwise avoided by strong political decisions and appropriate measures, the new divide is likely to create many problems and concerns.

General Educational Perspective

The ICT and the emerging society will enable us to carry out various educational functions and processes of today in a completely different way. By using Internet we can get information of any course/ programme of study, know the college/University and its faculty and facilities, select a programme and take immediate admission by making on-line payment. The faculty can communicate with the students through video conferencing, distributed class room, organize and conduct seminars, communicate assignments and its evaluation, take on-line examination when a learner is ready with a course of studies etc. All the educational functions such as course information [prospectus], admission, registration, teaching and learning, formative and achievement evaluation could be done with the help of ICT.

The learners perspective

The illiterate adult of Bangladesh is very keen to get their education. The following motivating factors are identified which have encouraged them to attend the literacy programme.

- Hope of economic solvency.
- Dream of a good, health and solvent family.
- Inspiration and active support of the society and the government
- Thinking of social status.

Social and Government perspective

In Bangladesh there are some NGOs those are working in literacy development programme. The Bangladesh has taken sufficient steps for eradicating illiteracy from the country. The nation hoped that the country would be free from the curse of illiteracy by 2006 as planned. The government has planned to re-examining and re-designing of the literacy programme, developing an overall vision for building a non-formal education network, and formulating a medium-term policy framework for literacy and continuing education So there is a greater prospects to eradicating illiteracy from the nation using ICT through distance mode. The country has to have

vast literate people within short span of time. There is no alternative to establish vast network using ICT in the country for eradicating illiteracy. Hence, Bangladesh Open University can play an important role using its vast infrastructures existing through out the country. The government has also keen to develop rural infrastructures providing electricity and building roads and other facilities. This will also accelerate for using technology in the literacy programme.

Conclusion

Technologies for distance learning are developing fast, especially in delivery systems and learning support network infrastructures. In order to achieve the required levels of Quality, Access and Cost that users and providers expect, it is likely that solutions for delivery of distance learning literacy programme will involve an appropriate combination of computer and network technologies.

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