This book makes an effort to provide an outline of library systems and services of selected major university libraries in Bangladesh. Application of information technology, availability of reading materials, use of application software, user services, housekeeping operations, networking accessibility of libraries, problems in computerization and networking in university libraries are discussed. The problems of application of IT in these libraries were the lack of fund, IT facilities, and skilled library professionals. The process requires adequate funding and skilled library professionals to implement the electronic systems and services in university libraries of Bangladesh. These libraries have progressed gradually in building a digital library despite the resource constraints. At final stage, I tried to provide a model plan applicable for university libraries in Bangladesh as well as for the academic libraries of Least Developing Countries (LDC). This book might be helpful for the students, practicing librarians, information professionals, teachers, faculties, and those who are interested to conduct research in the field of Information Science and Library Management.
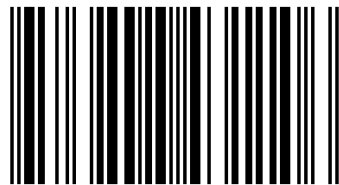
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Md. Nazim Uddin

Application Of Information Technology In Major University Libraries

An analytical study of Bangladesh

Uddin

TABLE OF CONTENTS

PREFACE

Information Technology (IT) is a driving factor in the process of globalization. Recent advances of IT to process and share information in digital form are reshaping the economies and social infrastructures of many countries around the world. Bangladesh is one of the few countries of the world started using computers since 1964. Gradually Bangladesh is moving towards applying and accepting technologies in different service areas including education sector. Education is the backbone of any nation. Similarly, library is the backbone of education. Education is must for any kind of development activities of the country. There are different tiers of education, such as primary, secondary, and higher. Library is a vital part for any higher educational institutions. No higher educational institutions can run without any resourceful library. A library is an essential pre-requisite for education, research, and development in accumulating and disseminating information. So, higher educational institutions must have facilities for a good library. Faculty members, students, scientists, and researchers are very eager to know about the library for better use of resources. In the current information age, it is not possible to keep track of development activities in the absence of a good modern library or information centre in the country. Public and private university libraries of Bangladesh are making an effort to cope with the advancement of IT facilities

available in global library activities. IT, library users, and library are integral part of each other, one cannot develop without the help of the others.

Application of Information Technology is changing the nature of libraries, library services, library users, and librarians in Bangladesh, and it continues to exert a major influence on the strategic direction of libraries in society. Today, the library services are transitioning from local traditional collections to global resources provided on demand via the most advanced networking technologies. It is now possible to retrieve information independently of time zones and geographical location, and to obtain the most up-to-date information from the library without walls, or the digital library. It is observed that currently IT has become a necessary part of any academic library, especially when the demand arises for faster services from the patrons of the library.

The present study assesses the status of application of Information Technology (IT) giving emphasis on library automation and usage of IT in various activities in the selected private university libraries of Bangladesh and compares it with major selected public university libraries in Bangladesh.

There are 31 public and 51 private universities in Bangladesh, of which the National University and the Open University are not having campus education with

undergraduate or postgraduate departments of studies. There are two international university libraries in Bangladesh (UGC, 2009). Since it was very difficult to study with 82 university libraries in Bangladesh due to a lot of technical problems, hence I decided to work with major public and private university libraries in Bangladesh.

The need and importance of use and application of information technologies in university libraries of Bangladesh have already been realized, and a beginning has already been made by major public and private universities.

The study has covered the areas, i.e. existing educational system of the country; the historical growth and development of public and private universities and its libraries in Bangladesh; the status of IT application in university libraries comparing major public and private university libraries in Bangladesh which has dealt with the use of IT in different activities of the library services, manpower, staff development and users' orientation on IT based library services; and focus on the users' demand, expectation, behavior pattern and information services of private university libraries in Bangladesh.

The whole study is described in nine chapters, including preliminaries and appendix.

Chapter one is allocated for background of the study, statement of the problems, objectives, scope, methodology applied to the study, implementation and organization.

Chapter two has dealt with the education system of Bangladesh where primary, secondary, higher, technical, and library science education are discussed briefly in this chapter.

Chapter three is devoted to historical background and development of private university education in Bangladesh.

Chapter four has covered historical growth and development of major public and private universities in Bangladesh.

Chapter five has contained historical growth and development of major public and leading private university libraries in Bangladesh. Existing facilities and services of libraries are discussed here briefly.

Chapter six has included the status of IT application in public and private university libraries in Bangladesh. The present scenario of IT facilities available in major public and private university libraries in Bangladesh are stated here briefly.

Chapter seven has given the findings of the study of 10 libraries surveyed.

Chapter eight has provided a model plan describing all sorts of IT facilities along with other facilities for establishing private university libraries in Bangladesh.

Chapter nine has discussed recommendations including problems and conclusion. Recommendations covered all aspects of development of private university libraries.

The study has concluded with limitations of the study.

Policy makers, library professionals, government officials, patrons of the library, staff members of the University Grants Commission, and particularly, management of private universities will be highly benefited by using this study. It is also expected that the study will certainly help the library professionals working in the private university libraries to develop IT based proper library system for the users' community.

MD. Nazim Uddin, PhD

ACKNOWLEDGEMENT

LIST OF ABBREVIATIONS

A Level	–	Advanced Level
AACR2	–	Anglo American Cataloguing Rules 2nd Edition
AAL	–	Ayesha Abed Library
ACM	–	Association of Computing Machinery
ACU	–	Association of Commonwealth Universities
AGORA	–	Access to Global Online Research in Agriculture
AIUB	–	American International University-Bangladesh
ATI	–	Agricultural Training Institute
AUST	–	Ahsanullah University of Science and Technology
BA	–	Bachelor of Arts
BALID	–	Bangladesh Association of Librarians, Information Scientists and Documentalists
BANBEIS	–	Bangladesh Bureau of Educational Information and Statistics
BANSLINK	–	Bangladesh National Scientific and Library Information Network
BARC	–	Bangladesh Agricultural Research Council
BAS	–	Bangladesh Academy of Sciences
BAU	–	Bangladesh Agricultural University
BBS	–	Bangladesh Bureau of Statistics
BCPS	–	Bangladesh College of Physician and Surgery
BCS	–	Bangladesh Civil Service
BDS	–	Bachelor of Dental Surgery
BEd	–	Bachelor of Education
BEP	–	BRAC Education Programme
BFRI	–	Bangladesh Fisheries Research Institute
BHMS	–	Bachelor of Homeo Medicine and Surgery
BINA	–	Bangladesh Institute of Nuclear Agriculture
BIPC	–	Bangladesh INASP-PERI Consortium
BIRDEM	–	Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders
BISE	–	Board of Intermediate and Secondary Education

BJur	–	Bachelor of Jurisprudence
BMEB	–	Bangladesh Madrasha Education Board
BMoF	–	Bangladesh Ministry of Finance
BMTTI	–	Bangladesh Madrasah Teacher's Training Institute
BNCU	–	Bangladesh National Commission for UNESCO
BNFE	–	Bureau of Non-formal Education
BNSB	–	Bangladesh National Society for the Blind
BNSc	–	Bachelor of Nursing Science
BoG	–	Board of Governors
BOU	–	Bangladesh Open University
BPEd	–	Bachelor of Physical Education
BRAC	–	Bangladesh Rural Advancement Committee
BSc	–	Bachelor of Science
BSMMU	–	Bangabandhu Sheikh Mujib Medical University
BSS	–	Bachelor of Social Sciences
BTEB	–	Bangladesh Technical Education Board
BU	–	BRAC University
BUET	–	Bangladesh University of Engineering and Technology
CAO	–	Chief Accounts Officer
CAS	–	Current Awareness Services
CCTV	–	Close Circuit Television
CD-ROM	–	Compact Disk Read Only Memory
CDS/ISIS	–	Computerized Documentation System/ Integrated Set of Information systems
CPEIMU	–	Compulsory Primary Education Implementation and Monitoring Unit
CPU	–	Central Processing Unit
CUDOS	–	Commonwealth Universities Database Online Services
CUET	–	Chittagong University of Engineering and Technology
DAMS	–	Diploma in Ayurvedic Medicine and Surgery
DDC	–	Dewey Decimal Classification
DEVINSA	–	Development Information Network for South

		Asia
DHMS	–	Diploma in Homeo Medicine and Surgery
DIA	–	Directorate of Inspection and Audit
DL	–	Digital Library
DOAJ	–	Directory of Online Access Journals
DPE	–	Directorate of Primary Education
DTE	–	Directorate of Technical Education
DU	–	University of Dhaka
DUMS	–	Diploma in Unani Medicine and Surgery
DVD-ROM	–	'Digital Versatile Disc' or 'Digital Video Disc' Read Only Memory
e-Books	–	Electronic books
Email	–	Electronic mail
EMIS	–	Educational Management Information Systems
EPAU	–	East Pakistan Agricultural University
EWU	–	East West University
FAQ	–	Frequently Asked Question
FCPS	–	Fellow of College of Physicians and Surgeons
FTP	–	File Transfer Protocol
GIS	–	Geographical Information System
GLAS	–	Graphic Library Automation System
GMT	–	Greenwich Mean Time
HINARI	–	Health InterNetwork Access to Research Initiative
HSC	–	Higher Secondary Certificate
HSTTI	–	Higher Secondary Teacher's Training Institute
ICDDR,B	–	International Centre for Diarrhoeal Disease Research, Bangladesh
ICH	–	Institute of Child Health
ICT	–	Information and Communication Technology
IDCH	–	Institute of Diseases of Chest and Hospital
IEDCR	–	Institute of Epidemiology, Disease Control and Research
IEEE	–	Institute of Electrical and Electronics Engineers
IER	–	Institute of Education and Research
ILL	–	Interlibrary Loan

INASP	–	International Network for the Availability of Scientific Publications
IPHN	–	Institute of Public Health and Nutrition
IPR	–	Intellectual Property Rights
IPSA	–	Institute of Post-graduate Studies in Agriculture
IR	–	Institutional Repository
ISBN	–	International Standard Book Number
IT	–	Information Technology
IUB	–	Independent University, Bangladesh
IUT	–	Islamic University of Technology
JSTOR	–	Journal Storage
JU	–	Jahangirnagar University
KUET	–	Khulna University of Engineering and Technology
LAB	–	Library Association of Bangladesh
LAN	–	Local Area Network
LC	–	Library of Congress
LC	–	Library Committee
LDC	–	Least-Developed Country
LIS	–	Library and Information Science
LLB	–	Bachelor of Laws
LLM	–	Master of Laws
MAN	–	Metropolitan Area Network
MARC	–	Machine Readable Cataloguing
MArch	–	Master of Architecture
MATS	–	Medical Assistant Training School
MBBS	–	Bachelor of Medicine and Bachelor of Surgery
MDG	–	Millennium Development Goals
MEd	–	Master of Education
MoE	–	Ministry of Education
MoPME	–	Ministry of Primary and Mass Education
MPhil	–	Master of Philosophy
MSc	–	Master of Science
MSS	–	Master of Social Sciences
MURP	–	Master of Urban and Rural Planning
NAEM	–	National Academy for Educational Management

NAPE	–	National Academy of Primary Education
NCTB	–	National Curriculum and Text Book Board
NGO	–	Non Government Organization
NICRH	–	National Institute of Cancer Research Hospital
NICVD	–	National Institute of Cardio-Vascular Diseases
NIKDU	–	National Institute of Kidney Diseases and Urology
NIO	–	National Institute of Opthalmology
NIPSOM	–	National Institute of Preventive and Social Medicine
NITOR	–	National Institute of Trauma, Orthopedics, and Rehabilitation
NSAPR	–	National Strategy for Accelerated Poverty Reduction
NSU	–	North South University
NTRCA	–	Non-Governmental Teachers' Registration and Certification Authority
O Level	–	Ordinary Level
OIC	–	Organization of Islamic Countries
OPAC	–	Online Public Access Catalogue
OUP	–	Oxford University Press
PC	–	Personal Computer
PEDP	–	Primary School Education Programme
PERI	–	Programme for the Enhancement of Research Information
PFED	–	Progoti Foundation for Education and Development
PG	–	Postgraduate
PhD	–	Doctor of Philosophy
PRSP	–	Poverty Reduction Strategy Paper
PTI	–	Primary Teachers Training Institute
PUA	–	Private University of Act
R & D	–	Research and Development
RFID	–	Radio Frequency Identification
RINSACA	–	Regional Informatics for South & Central Asia
RUET	–	Rajshahi University of Engineering

		and Technology
SCEMRC	–	The Society for the Care and Education of Mentally Retarded Children
SDI	–	Selective Dissemination of Information Services
SSC	–	Secondary School Certificate
TTC	–	Technical Training Centre
TTTC	–	Technical Teacher's Training College
UG	–	Undergraduate
UGC	–	University Grants Commission
UNESCO	–	United Nations Educational, Scientific, and Cultural Organization
UPS	–	Uninterrupted Power Supply
USTC	–	University of Science and Technology Chittagong
VC	–	Vice-Chancellor
VCR	–	Video Cassette Recording
VTTI	–	Vocational Teachers' Training Institute
WiFi	–	Wireless Fidelity
WiMax	–	Wireless Maximum Forum (Wireless Digital Communications System)

Chapter I

INTRODUCTION

Background

Education is the backbone of any nation. Similarly, library is the backbone of education. Education is must for any kind of development activities of the country. There are different tiers of education, such as primary, secondary, and higher. Library is a vital part for any higher educational institute. No higher educational institute can run without any resourceful library. A library is an essential pre-requisite for education, research, and development in accumulating and disseminating information. So, higher educational institutes must have facilities for a good library. Faculty members, students, scientists, and researchers are very eager to know about the library for better use of resources. In the current information age, it is not possible to keep track of development activities in the absence of a good modern library or information centre in the country. "The developments of a country depend largely on its research output" (Mostafa, 2004:2). Libraries usually have a very important role to play in future development and socio-political, cultural, educational, and intellectual progress of the country.

Library started as a social unit in the social structure. According to Ranganathan, it is a 'growing organism' (Kumar, 1992:1). It develops and continues to grow as a

social organization. Originally, the library was intended to preserve racial memory through books; however, with the progress of civilization and advances in science and technology, libraries and information centres are intended to preserve the memory of mankind through the compounded global store of intellectual capital, consisting of all forms and types of graphic, holistic and acoustic materials, including microforms, audiovisual products, computers, CD-ROMs, DVD-ROMs, pen drives, Intranet, Internet, e-library, digital library, and photocopies (Sattar, 1997:1).

Bangladesh still lacks a well-organized and planned library and information system. At the same time, some organizations in the government and private sectors in Bangladesh have shown an awareness of the importance and need of the information system. The existing libraries are not properly organized and suffer from various problems, such as, acute shortage of funds, inadequate information resources, lack of qualified and skilled staff, modern technological facilities, and there is a lack of willingness of the authorities. Under such situation, it is really very tough for any single library in Bangladesh to meet the information needs of its users. To overcome this situation of research and development activities, establishing excellent academic library, with all sorts of information technology (IT) facilities, is a must. The main reason of developing this excellent library is to use library resources effectively through various forms. The resources

are needed to ensure such a library where information, equipment, facilities, systems, services, qualified staff, time, and money are available. No library can, now-a-days, run without IT. Many academic libraries of the country started to realize that using IT facilities is one of the most effective ways to provide information at right time to users. But many of them have still not decided about what type of software they should use for the library, how they include IT facilities in their existing library system, due to lack of experience and education on IT, etc. (Mannan, 1997:2-3).

In the current study, an attempt has been made to propose and design an appropriate model plan for establishing excellent private university libraries in Bangladesh.

Statement of the problems

The information technology relating to library systems and services has come into force at the present information age in Bangladesh. This technology has been adopted by some academic libraries in carrying out their duties and responsibilities on information services and management. Although it is very challenging for Bangladesh to cope with the fast technology due to cost-effectiveness and administrative policy-making, the country is lagging far behind. It has been observed that many library professionals have been working in public university libraries, however, they are not much skilled in IT to

handle information systems in the country, except few. On the other hand, those who are working in private university libraries are much better-skilled in IT to handle information systems for the respective institutions. Most private universities in the country do not have any organized library, except a very few.

It was almost about 20 years back that the need of the use of information technology in libraries was felt in Bangladesh. But those efforts were isolated, institution-based, and confined to a few person's foresight, dedication, and determination. If we consider these efforts in the light of a long span of 20 or more years, it is very disappointing compared to the situation of our neighboring country, i.e. India. Due to rapid advances in computer, communications media, and related technology, libraries could not catch up that trend. While the application and use of information technology in library and information services are developing at a rapid pace in other countries, we, in Bangladesh, seem to be still slow due to lack of interest and initiatives for using information technology. Bangladesh has made a little progress in the IT sector. In the real sense, we are only considering in terms of applying information technology in the management of libraries. The librarians of Bangladesh have fully realized the importance and use of information technologies in discharging their duties efficiently. But just the desire to use information technology is not enough. There are so many basic problems in the application and use of

information technologies in libraries, particularly in higher educational institute libraries. These problems are very acute in Bangladesh (Sattar, 1997:3).

There are some problems which I felt seriously as a professional librarian of a leading private university in Bangladesh. As such I profoundly engaged myself in finding out the relevant problems in the process of application and use of information technology in private university libraries of Bangladesh. At present, there are 54 private universities in Bangladesh (UGC, 2006:88-110). Most private universities do not have any organized library with all sorts of IT facilities. Some of them have their libraries only in name, and some private universities have their organized libraries to some extent. But still now, they are facing some problems in organizing their libraries.

On the other hand, if we review the public university libraries, the picture is not at all satisfactory. There are 24 public universities in Bangladesh (UGC, 2006:63-76). But at present, only two universities have full-fledged professional librarians in their respective university library, such as Bangladesh University of Engineering and Technology, and Shahjalal University of Science and Technology. Other than these two universities, the remaining universities do not have any professional librarian. Some libraries have their librarians but not professional. The librarian post is held by the teacher of

the respective university. Some public universities have professional deputy librarians, but, in some cases, they hold the post of librarian-in-charge. Under the circumstances, no public universities could develop their libraries along with IT infrastructural facilities for providing faster services to users' community, except a very of them.

Recently, University Grants Commission (UGC) of Bangladesh is trying to plan and start some programmes for public and private university libraries in Bangladesh with the help of IT facilities funded by the World Bank. The UGC will act as a focal point of all universities. Now-a-days (March 2008), it has been observed that the UGC has a very good intention to do something in respect of establishing digital libraries, electronic libraries, consortium, and developing IT infrastructural facilities for the university libraries in Bangladesh.

Since librarians are moving beyond their traditional roles as custodians of printed materials and integrating new methods of information storage, retrieval, and transmission into existing collections and services; they are, at the same time, incorporating the extensive changes that information technologies bring to organizational structures and staff responsibilities. **Cline** and **Sinnott** (1983:172) mentioned the consequences of these technological changes in their book titled *The Electronic Library*. They explained that "libraries are being

pummeled by profound and undoubtedly permanent changes. For example, the distinction between public and technical services appears to be eroding; communications within library and outside organizations are taking on new dimensions; and new demands are being placed on professional staff. These shifts and turns, moreover, are not one-time modifications to which libraries subsequently adjust, quickly rebounding to status quo. Rather automation apparently introduces continuous change".

Libraries are currently experiencing technological changes in how services are provided and what these services are. These changes can be described into three major phenomena: the information explosion, rising costs of information materials, and the technology revolution (Sattar, 1997:4).

Information technology has brought a great impact and changes in our daily life, such as use of cell phone, electronic communication, internet facilities, etc. In the same manner, development of information technology has already deeply affected our libraries. Almost every function performed in a library has been altered to some extent by advances in electronics, computerization, and telecommunications. The manner in which libraries process, store, and retrieve information is changing, as is the information medium itself. The technological evolution in libraries has been called a 'quiet revolution'. According to *Becker* (Winter 1979:409-17), it is quiet

because the signs of change are subtle and not always obvious; it is a revolution because all libraries are affected by information technologies.

Today's libraries are in transition from manual to electronic systems. Databases are replacing card catalogues, printed indexes, and abstracts. Information is being produced, stored, and disseminated in new forms. The merger of computers and printing is leading to a new method of information transfers. Libraries are no longer self- sufficient but are linked through electronic networks of various types. The changes brought by advances in information technology have been so extensive that it is difficult to assess their total effect, but it is clear that libraries are in a state of fundamental transformation. In the words of **Battin** (May 1984:170), libraries are being "reinvented in the electronic environment".

In fact, the purpose of this study is mainly to help and establish university libraries with information technology for placing those libraries in a structural framework. As no such programme had been undertaken by any professional librarian, new avenue in the education sector, very challenging place for professional librarians, good opportunity to learn and to make the librarian scholar, vast scope to work, made myself interested in the subject and led me to take up this study.

In this study, an attempt has been made to identify all the problems relating to information technology in organizing university libraries. So, at first, problems will be identified, and second, necessary recommendations for remarking those problems in the application of information technologies in university libraries of Bangladesh will be thoroughly analyzed and discussed. As such, the librarians and information scientists could be benefited.

In view of the above, I have decided to work on Application of Information Technology in Major University Libraries of Bangladesh by identifying and analyzing problems and showing and recommending the future prospects so that Bangladesh could go forward in establishing university libraries with all IT facilities despite its present shortcomings in this area.

Objectives of the study

It has been observed that the Government of Bangladesh is not paying much attention to organize public university libraries due to budgetary constraints. As a result, public university libraries are suffering a lot. On the other hand, authorities of private university libraries are not that much interested to invest in organizing their libraries as there is no recognizable pressure from the Government and from users for establishing good libraries. There is no legal obligation also to establish libraries in private universities.

Although the facilities of university libraries and laboratories have been checked by UGC people before according the approval for establishing private university. However, the way entrepreneurs are keen to set up a university, they are not that much eager to establish a library at the same pace. Since every university should have library, so the private university authority maintains a library but not in an organized way. A very few private university maintain organized libraries. But, to some extent, there is a demand of organized libraries from users. Libraries are used in various purposes, such as reading, borrowing, reference, referral, browsing, photocopying, guiding, education, research, skills development, resource-sharing, networking, etc. Keeping these in mind, the current study has been proposed to develop a model university library, along with all sorts of information technology facilities in Bangladesh. So, the study has been designed to:

- ascertain the present scenario of library services of major public and private universities in Bangladesh;
- determine how information technologies are applied to library and information services in major public and private universities of Bangladesh;
- find out the problems relating to application and use of information technologies in the major university libraries and information services of Bangladesh;
- find out the prospects for the future of information technologies in the said libraries of Bangladesh;

- discover the strengths and weaknesses of collections of the said university libraries;
- detect the communication channels through which information is acquired by the users;
- know the current status of information technology facilities available in the university libraries;
- learn the availability of manpower, finance, and other resources required for establishing good university libraries in Bangladesh;
- get an idea of the developments in the information technology usage in different activities of the said libraries and information services;
- trace the developments in application and use of information technologies in library automation in Bangladesh;
- formulate a model plan of action for further developments in the use of information technology in university libraries in Bangladesh;
- advise the Bangladesh Government, authorities of private universities, and management of university libraries, for giving the importance of application and use of information technology in university libraries of Bangladesh.

Scope of the Study

The present study intends to cover the whole range of facts relating to the use and application of information technology in libraries of private universities of

Bangladesh. At present, there are 24 public universities in Bangladesh, of which the National University and the Open University are not having campus education with undergraduate or postgraduate departments of studies. There are also 54 private universities in Bangladesh. Since it is very difficult to study with 78 university libraries in Bangladesh due to lot of technical problems, hence I have decided to work with major public and private university libraries in Bangladesh. Accordingly, I have categorized public and private university libraries in Bangladesh as follows:

1. Dhaka University Library (categorized as general university)
2. Bangladesh University of Engineering and Technology Library (categorized as engineering university)
3. Bangladesh Agricultural University Library (categorized as agricultural university)
4. Jahangirnagar University Library (categorized as residential university)
5. North South University Library (categorized as UGC and Webometrics ranking)
6. Independent University, Bangladesh Library (categorized as UGC ranking)
7. East West University Library (categorized as UGC and Webometrics ranking)
8. BRAC University Library (categorized as UGC ranking)
9. American International University Library (categorized as UGC ranking)

10. Ahsanullah University of Science and Technology Library (categorized as UGC and Webometrics ranking)

The above-mentioned universities have been included in this study for ensuring representative-ness from public and private university libraries and considering the application and usefulness of information technology facilities to users. Ten university libraries of the country were purposefully selected and brought under the investigation, of which, four are public universities and six are top-ranking private universities in Bangladesh.

The need and importance of use and application of information technologies in university libraries of Bangladesh have already been realized, and a beginning has already been made by major public and private universities, such as DU, BUET, NSU, IUB, EWU, BU, and AIUB.

The present study reviews the following issues out of a large number of issues that can be studied in relation to set up a model university library in Bangladesh:

- available literature of major university libraries in Bangladesh;
- status of major university libraries in Bangladesh
- status of available IT facilities in important university libraries of Bangladesh;
- survey of some selected university libraries and users in Bangladesh;

- a model plan for establishing university libraries along with all sorts of IT facilities in Bangladesh based on the survey results, literature review, and other considerations;
- recommendations for the smooth management and operation of the university libraries.

Methodology

Choosing methodology is one of the important works for any research. Correct research findings need reliable scientific methodology. In the present study, the following methodology has been undertaken:

a) Study design
- Introduction and methodology;
- Theoretical discussion of education system of Bangladesh;
- Overview of private education in Bangladesh;
- Discussion on historical background with existing status of major public and private universities and their libraries in Bangladesh;
- Collection of information and analysis of the data of major university libraries;
- Development of a model plan and recommendations.

b) Literature Review
Existing literature on the subject were studied and reviewed to examine the status of activities and services along with the help of IT facilities of major university

libraries of Bangladesh. A bibliography of available literature has been given at the end of each chapter of the thesis.

c) Sample design

Considering the types, IT facilities, services, and nature of public university libraries, only four major public university libraries were selected for this study. On the other hand, as per ranking of the UGC and Webometrics, a Spain based organization funded by European Union, six private university libraries were selected for investigation. At the first phase, these 10 university libraries were brought under this survey (table 1).

Table 1: University libraries brought under the survey

Sl. No.	Name of Public University	Establishment year	Location
01	Dhaka University Library	1921	Dhaka
02	Bangladesh University of Engineering and Technology (BUET) Library	1961	Dhaka
03	Jahangirnagar University Library	1970	Savar, Dhaka
04	Bangladesh Agricultural University Library	1962	Mymensingh
	Name of Private University		
05	North South University Library	1992	Dhaka
06	Independent University, Bangladesh Library	1993	Dhaka
07	American International University – Bangladesh Library	1994	Dhaka
08	Ahsanullah University of Science and Technology Library	1995	Dhaka
09	East West University Library	1996	Dhaka
10	BRAC University Library	2001	Dhaka

Source: University Grants Commission of Bangladesh. 2007, Annual report 2006. Dhaka: UGC.

At the second phase, more than 100 users from different groups, such as students, teachers, researchers, and other categories have been interviewed.

d) Survey

Information was collected through two sets of structured questionnaires, of which one was prepared for the survey of sample libraries and the other one for the interview of the users. Both the questionnaires, one for librarians and the other one for users, were prepared keeping in view the objectives of the study.

Based on the analysis of the general and specific objectives of this study, information on 15 broad categories of variables for libraries and 10 broad categories of variables for users were identified.

The variables and indicators of the questionnaires for libraries and users are shown in Table 2 and Table 3 respectively:

Table 2: Variables and indicators for university libraries

Types of variables		Indicators
01	Institutional profile	Name, designation, and head of the university, year of establishment, educational qualification of chief executive, parent body, name of library, address, telephone, fax, telex, email, head of library, pay-scale of librarian, highest

		educational qualification of librarian
02	Facilities	Area of the library
03	Processing status of library materials	Methods of processing, cataloguing code, form of catalogue, catalogue system, cataloguing status of books and journals, union catalogue, classification scheme, and subject heading lists.
04	Users' attendance	Teachers, students – Under Graduate, Post Graduate, M.Phil., Ph.D., researchers, staff members, and others
05	Library statistics	Number of books, journals, slides, daily newspapers, news clippings, audio-cassettes, video-cassettes, microfilms, microfiches, CD-ROMs, DVD-ROMs, reports, theses, maps, atlases, e-resources, subscribed databases, complimentary databases, number of additions as per fiscal year, number of current journals being subscribed, number of subject collection list – where collection is stronger
06	Library staff	Number of professional staff, para-professional staff, non-professional staff, technical staff, and general staff
07	Computers and infrastructural facilities	Computer facilities, number of computers, configuration of computers, pen drive port facilities, printer facilities, provision of CD and DVD ROMs, e-mail facilities, name of library software, name of databases, number of records entered into different databases, availability of network connection, Internet facilities, consortium, and etc.
08	Budget	Institutional budget, library budget, budget of books and journals, salaries of library employees, building cost, and training of library staff
09	Library services	Various types of services, such as reading room, reference, content awareness, indexing, bibliographic, on-line searching, e-alert, translation, SDI, CD-

		ROM, photocopying, abstracting, counseling, referral, consultation, e-mail, mode of different types of services, and others
10	Type of technologies used	Computer, facsimile, telex, telephone, photocopier, electronic mail, television, internet, and others
11	Type of services expected by users	Services are expected by users such as borrowing books, reference services, reading room, photocopying services, OPAC, online searching, Internet, CD-ROM search, email, land phone, through email and online network, borrowing journals, through fax, through telex and others
12	Reasons of library computerization	For - sophistication, smooth services, less time-consuming, shortage of sufficient space, attracting readers, cost-effective, accuracy, more effective literature search, makes an user efficient, less errors, increasing efficiency of library staff, increasing standard of library services, providing more effective services, broadened the scope of services, and others
13	Problems in providing services with IT facilities	Increasing cost, non-availability of IT related person, lack of computer literacy of users, time-consuming, technical barrier to access, lack of IT knowledge of staff, makes a staff idle, laborious, budgetary problems, environmental problems, and others
14	Different programmes of library services	Inter-library loan, use of IT changed the range or style of services, digitization programme, intellectual property rights (IPR), and measures to preserve resources.
15	Any proposal or recommendation	Any other developments which are not covered in this questionnaire.

Table 3: Variables and indicators of users

	Types of variables	Indicators
01	Personal data	Name, age range and sex
02	Category of users' details	Student – Under Graduate, Post Graduate, M.Phil., Ph.D.; faculty member, researcher, administrator, pay-scale, organizational affiliation, area of specialization, present field of study, and frequency of library visit
03	Information need	Collect information for teaching or study purpose; know about political situation, economic activities, and social life of the country; check references; for entertainment or recreation; gain knowledge from journals; write articles for seminar/conference; review articles or prepare research proposal; organize new design; find statistical data; and get information in discussing with the Librarian
04	Channel of information	Asking the author, attending conferences/seminars, accessing on-line databases, taking help of your senior professionals, writing letter to a friend, through telephone/ fax/email/personal visit to an expert, from personal collection of your colleagues or own collection, and any other channels; and frequency of use of information sources
05	Time spent in the library	Time allotted for users
06	Evaluation of library resources	Journals, books, magazines, newspapers, conference proceedings, dissertations, theses, indexing/abstract journals, text-books, encyclopaedias, dictionaries, directories, yearbooks, reference books, CD-ROMs, DVD-ROMs, video cassettes, online journals, published bibliographies, on-line databases, unpublished sources, and other sources

07	Book-shelf area	Satisfaction of users about the arrangement of resources, suggestions of users
08	Reading room	Reading room space, reading room facilities, proposal for reading room, and recommendations
09	Library services	Lending, reference, referral, photocopy, on-line new arrival, on-line database, current content, literature searches, newsletter, translation, newspaper clippings, abstracting, indexing, SDI, guidance, students counseling, and others
10	Recommendations	Science and technology database, consortium for sharing databases, networking facilities, IT-based acquisition systems, use of electronic media for transfer of information

e) Data collection

General data about major university libraries of Bangladesh have been collected by sending questionnaires and visiting the universities, whenever needed. The librarians of the selected library were interviewed carefully with the structured questionnaires for the purpose of the study. Based on random sampling, 148 structured questionnaires prepared for users and librarians, which were distributed among various categories of library users and librarians of respective university. The users' group includes students, faculty members, researchers, administrators, and others from different universities. 10 questionnaires were received filled up by the librarians of major universities, and 130 questionnaires were received filled up by different users of different

20

universities. All these have been tabulated and analyzed (both the questionnaires are given in **Appendix-1**). The sample consists of the following:

Public universities	04
Private universities	06
Students	105
Faculty members	17
Researchers	05
Administrators	03
Total	140

f) Sample

The following criteria were selected for the samples study:

- Libraries (public) which have already undertaken automation programme;
- Libraries (public) which have IT facilities;
- Libraries (private) which have satisfactory ranking according to the UGC of Bangladesh;
- Libraries (public and private both) which were ranked by Webometrics a Spain-based organization funded by European Union
- Regarding the users: students, faculty members, researchers, and administrators from different universities who use libraries either frequently or on ad-hoc basis for meeting their information needs were selected.

g) Data processing and analysis

Two sets of questionnaires of this study were duly edited to verify that the data recorded in the questionnaires have been carefully and accurately filled in. All the questionnaires were duly coded after editing for computer input. The steps followed in the process of data input are:

- entering data on the computer;
- conducting validation checks to ensure that data have been correctly entered on the computer;
- preparation of output tables.

The SPSS (12th edition) was used to enter, edit, and analyze data. Findings of the study have been presented in 47 tables and 14 figures using bivariate and multivariate analyses as per their applicability.

Implementation

The study was implemented in three steps:

Step I: Reviewing of all available relevant literatures, preparation of reading list / bibliography for the background study;

Step II: Preparing and testing of questionnaires, sample design, data collection, data analysis, presentation; and

Step III: Development of a model library.

Organization of the text:

The whole work is arranged in nine chapters, including preliminaries and appendices.

Chapter one is allocated for background of the study, statement of the problems, objectives, scope, methodology applied to the study, implementation and organization.

Chapter two deals with the education system of Bangladesh where primary, secondary, higher, technical, and library science education are discussed briefly in this chapter.

Chapter three is devoted to historical background and development of private university education in Bangladesh.
Chapter four covers historical growth and development of major public and private universities in Bangladesh.

Chapter five contains historical growth and development of major public and private university libraries in Bangladesh. Existing facilities and services of libraries are discussed here briefly.

Chapter six includes status of IT application in public and private university libraries in Bangladesh. The present scenario of IT facilities available in major public and

private university libraries in Bangladesh are stated here briefly.

Chapter seven gives the findings of the study of 10 libraries surveyed.

Chapter eight provides a model plan for establishing university libraries in Bangladesh.

Chapter nine discusses problems, includes recommendations and conclusion.

The study concludes with **limitations** of the study.

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Chapter II

EDUCATION SYSTEM OF BANGLADESH

Bangladesh: Country Profile

According to the Constitution of the People's Republic of Bangladesh (2000:2), the official name of the country is People's Republic of Bangladesh. The country is located in South Asia. Dhaka is the capital of Bangladesh. As stated in the Banglapedia, the independence of Bangladesh was declared on 26 March 1971. Since then, the day has been observed as the Independence Day. The Victory Day (*Bijoy Dibash*) is observed on 16 December 1971 (Islam, 2003:251).

As stated by Bangladesh Bureau of Statistics (BBS) 2005, Bangladesh lies in the north eastern part of South Asia $20^o.34¢$ and $26^o.38¢$ north latitude and $88^0.01¢$ and $92^0.41¢$ east longitude. The area of the country is 56,977 sq. miles or 1,47,570 sq. k.m. The limits of territorial water of Bangladesh are 12 nautical miles and the area of high seas extending to 200 nautical miles measured from the base lines constitutes the economic zone of the country.

The Padma, Meghna, Jamuna, Brahmaputra, Tista and Karnophuli are the principle rivers of the country. Their branches numbering about 230 with a total length of about

24,140 k.m. The total forest area covers about 13.36% of the land area. There are six seasons in a year, three namely, winter (November-February) summer (March-June) Monsoon (July-October) are prominent. The percentage of urban population was 23.10 while that of rural 76.90. The growth rate of population was 1.48 per annum estimated on the basis of 2001 census. The density of population was approximately 755 per sq. km in 1991. The percentage of Muslim population was 88.3 while that of Hindu, Buddhist and Christian was 10.5, 0.6, and 0.3 respectively. As per population census of 2001, the adjusted population of the country stood at 130.0 million and the literacy rate was 45.3 percent for population 7 years and above. There are six divisions, 64 districts, 507 thana/upazila, 4484 unions (rural), 87319 villages, 59990 mauzas (rural and other urban), six city corporations and 223 municipalities. Our per capita national income is Tk. 31669 (US$ 482). Our national language is Bengali. But English is also widely spoken and understood. International time is considered GMT+6.00 hours. Jatiya Sangsad is the national parliament which is responsible for making laws in the country. Total number of members of the Jatiya Sangsad is 330. Out of 330 members, 300 members are directly elected by adult people of the country and rest of 30 female members are elected by the members of Jatiya Sangsad. The highest judiciary in the country is Supreme Court headed by the Chief Justice. Bangladesh has enormous deposit of natural gas. So far, 20 gas fields have been discovered from which natural gas

is available for power generation, industrial and other uses. Bangladesh Bank is the central bank of the country which is responsible for promoting growth and development of banking system in the country and for overall control of the activities of all other banks (BBS, 2005).

History of Education in Bangladesh

There is a long history of its education system in Bangladesh. It has gone through a variety of phases of that system. Bangladesh inherited an education system by the British administration long before the Wood's Education dispatch of 1854 (Kabir, 1975: 31). Economic development of Bangladesh is, to some extent, dependent on foreign aid as an LDC. The Constitution of Bangladesh, adopted on 4 November 1972, made the state responsible for the provision of free and compulsory education and the abolition of illiteracy. The educational infrastructure of Bangladesh is – a) Pre-primary, b) Primary, c) Secondary, d) Higher-secondary, e) Bachelor, and f) Masters level programmes and institutions (BNCU, 1993: 4)

Noor-al-Rahman stated in his website (http://sanisoft.tripod.com/bdeshedu/systems.html) that during the British rule, education was mainly reserved for the wealthy class. The language of pedagogy was English as schools were run by religious nuns and other British

people. The few natives who were fortunate to receive education were either from wealthy families (Nawabs) or whose family had ties with the British governing body. If any one wanted to receive higher education, such as a university degree, to become a professional, he or she had to attend schools in England. Such was the case of the famous Indian Mahatma Gandhi who traveled to London to study law. Education was largely deprived from the common people as the natives were treated as second-class citizens.

After the British had left the Indian Subcontinent, the territory presently known as Bangladesh came under Pakistani regime as East Pakistan the state of Pakistan. During this period, education was still very scarce but those who had the means of acquiring it were no longer considered second-class citizens. However, the state language was Urdu: the mother tongue of Pakistan. In the region of East Pakistan, the native language was Bengali and not Urdu. Therefore, a conflict over language was eminent. There were some schools whose systems were still largely functioned in the English language but there were a few schools whose systems were still taught by the British and the nuns, for instance, the Holy Cross and numerous Cadet Colleges. However, people had to know Urdu to get a Government job as it was also state language. As the Bengalis felt insulted to submit their rights to the Pakistanis, they did not want to learn Urdu. After a long time and bloody language movement,

Bengalis were finally given their rights to practice the language Bengali in their own homeland.

After the liberation war of Bangladesh in 1971, the People's Republic of Bangladesh became an independent nation free to choose its own educational destiny. After independence, many different forms of education were permitted to co-exist in Bangladesh as it was, still it is, a secular state. The remarkable British system was, and still is, largely practiced. In fact, presently, the education system of Bangladesh is divided into three different branches. Students of Bangladesh are free to choose anyone of them provided that they have the means. These branches are: a) The English Medium, b) The Bengali Medium, and c) The Religious Branch.

The Indian Subcontinent is still very influenced by the British rule as the second official language of India, Pakistan, Sri Lanka, and Bangladesh, is still English. Students in Bangladesh have the right to attend schools in the English medium where courses are all taught in English language. In those schools, English books are using with the exception of the Bengali courses and the Religious course which are offered in Bengali and Arabic. However, English medium schools are mainly managed by the private sector. Hence, these schools are reserved for the wealthy class. After completion of three years of pre-school, students must pass through ten grades to be eligible for appearing the Ordinary Level examinations,

which is called the O-Level. After successful completion of O-Level examinations and then after one more year of studies, students may appear the Advanced Level (A-Level) examinations. Both these levels are offered for Arts, Commerce and Science students. The question papers and syllabuses of O-Level and A-Level are prepared in England. To write these examinations, students must go to the British Council in Dhaka. Once the examinations are written, they are sealed in envelopes and sent to England for corrections. After the A-Level, students are free to choose their subjects in the Universities but it has been observed that most of them have a tendency to leave the country to study abroad.

Bengali medium is the most popular medium for the common people of Bangladesh. Alternative to the English Medium is the Bengali Medium, which is offered by the Government. In the Bengali Medium, all the courses are offered and taught in Bengali with the exception of English courses and the Religious courses. The tuition fee is nominal compared to English medium schools. But they vary from school to school. For example, a Government school for the children of Army officers is likely to be more expensive than a Government school located in a rural area. Everyone has the right to attend these schools provided that one meets the minimum criteria. After three years of pre-school, Bengali medium students study five years in primary school. Then they move to high school for completion of grade five to grade ten. At the end of the

10th grade, one must appear for the Secondary School Certificate (SSC) examinations, which is common to everyone graduating in the same year in Bangladesh. These examinations are conducted by the regional boards and students write the examinations in different schools as indicated by their respective boards. Once finished, these examination scripts are evaluated and checked by teachers from all over the country and results are published in the newspapers and also in the website.

Bangladesh is a poor country with millions of homeless children. There are a number of religious institutions called "Madrashas" where children are sheltered, fed and taught the ways of Islam by priests. These children learn the scripts from the holy Koran and the regular prayers. Usually, Madrashas are linked with Mosques.

Subsidies for these types of institutions are very low, often these establishments rely on public donations. Higher studies for students of these establishments are close to non-existent, the children often become priests and other religious figures. Islam plays a very leading role in the education systems of Bangladesh. Since 1983, in all the branches, it is required by the Government to teach Islamic studies. Therefore, children learn to read Arabic from a very early age. However, non-Moslem students are never forced to learn the Koran and can be excused from Islamic courses regularly.

The above are the main branches of the education system of Bangladesh. Besides these, there are other disciplines such as cadet colleges and boarding schools.

Present Education System of Bangladesh

According to the BANBEIS (2007:1), there are different streams of education in Bangladesh, namely: **a) General education, b) Madrasah education, c) Technical and vocational education, d) Professional education, e) Teacher education, f) Specialized and special education.** These different streams have been treated separately. Each stream of education system of Bangladesh is described below:

a. General Education
As stated by BANBEIS (2007:5), there are three Level of general education exist in Bangladesh, such as: **i) Primary Education, ii) Secondary and Higher Secondary Education, and iii) Tertiary Education.**

i. Primary Education

Before 1952, primary stage of education comprised a four-year course, i.e. class I-IV. In 1952, the duration of primary education was extended by one year, i.e. class I-V and the same duration is retained still. The academic year starts in January and ends in December. Primary schools

are run in two shifts. Usually, first shift starts from 10.00 am up to 12.00 noon and second shift from 12.00 noon to 4:15 pm.

As stated in the Encyclopaedia of the Third World (1982), the duration of primary education is five years beginning at the age of six. Generally, between 6-10 years children are enrolled in primary education. There are many primary schools in the country and many secondary schools have primary sections attached to them.

According to BANBEIS (2007:5), there are different types of institutions in primary level, namely: Government primary school, registered non-Government primary school, community school, experimental school (attached to PTI), NGO school (schools operated by N.G.O.), kindergarten school, ebtedayee madrasah, primary section attached to high school, ebtedayee section attached to high madrasah, and non registered primary school. Course curriculum is designed by National Curriculum and Text Book Board of the Government. Curriculum of Primary school for classes I and II consists of BangIa, Arithmetic and Environmental Science (General Science and Social Studies), from class III onward the students have to take physical education, arts and crafts, music and religion as additional subjects. English is taught as the second language from class III. Examinations system presents at the primary level. Next higher grade promotion is given at the primary level on the basis of satisfactory results of the

annual examinations, which held, usually, at the end of each academic calendar year. But classes I and II are treated as one unified class. For primary level, there is no system of public examinations at the end of class V.

Pre-primary education system exists in Bangladesh. The first five years are very important for every child in his/her life. The children who are living in urban areas, they have to go through this system. There are lots of nursery schools, kindergartens, tutorial and pre-cadet schools located in urban areas which have pre-primary classes, like play group, standard I, II and III. Some of these institutions also provide primary, secondary and higher secondary level courses and prepare students for appearing examinations at the 'O' and 'A' level in English medium. Although the first five years of children's life are very significant for pre-primary education but the recognition of the Government for the pre-primary education (baby class) is absent even though many primary schools offer such facilities (BANBEIS, 2007:6-7).

Pre-primary education is also offered by a few thousand mosque schools located in the rural areas of Bangladesh. The Department of Education maintains a loose supervision over them (Hossain, 1985:20).

Mosque-based institutions like Maktab, Forkania and Qurania madrasah also offer pre-primary education along with religious teachings. These institutions have been

imparting literacy along with religious teachings and serve as feeder schools to primary schools and madrasahs. There are other institutions mainly for religious education like 'Hafizia' madrasahs where the students learn reading and memorization of the Holy Quran. Yet there are other types of pre-primary institutions named as 'Qiratia' madrasahs where the children becomes specialised in the recitation of the Holy Quran (BANBEIS, 2007:7).

Primary education is free at the primary schools. Government has been extending greater emphasis on the universalisation of primary education since 1973. Later primary education has been made compulsory for all children of 6-10 years old by an Act of 'Jatiyo Sangshad' i.e. Parliament (BANBEIS, 1992). Along with the lines of the fundamental principles of the Constitution of Bangladesh, the Primary Education (compulsory) act 1990 was enacted to make sure the universal primary education in the country. A programme for compulsory primary education was introduced all over the country in 1993. In 1991, the total number of primary schools in Bangladesh was 49,539. At present, number of school stands at 80,401 including Ebtedaye Madrashas. The net enrollment rate has increased from 80% in 2003 to 87.24% in 2005 (Baseline survey, March 2005). Teachers and students ratio is 1:54 (Baseline survey, March 2005). Gender equality in enrollment has already been achieved. Net enrollment rate of girl students is higher (98.41%) than the boy students (89.34%). At the same pace, the rate of

recruitment of female teachers is increasing following the provision made in the relevant recruitment rules to recruit 60% female teachers in Government primary schools. Presently, the ratio of female-male teachers in Government primary schools is 44:56. The rate of recruiting female teachers has increased to 44% from 21.09% in 1991. Literacy rate (7yr+) has reached to 63%. However, quality of education and high dropout rate of students are challenges to achieve the goal of ensuring universal primary education [Bangladesh Ministry of Finance (BMoF), 2007 : 155].

The Government has undertaken various programmes in connection with the Poverty Reduction Strategy Paper (PRSP) to ensure universal primary education. Highest budgetary allocation of Tk. 8,534.22 crore has been given by the Government for the education sector of which 45% has been allocated for the Primary and Mass Education in fiscal year 2005-06. Measures have been taken also to ensure women's empowerment by expanding female education, increased participation of women in socio-economic development activities, exemption of tuition fees of female students up to class XII. For expanding technical education, a double shift system has also been introduced in polytechnic and technical schools and in colleges. Moreover, meritorious students are being rewarded with general, merit and vocational technical scholarships (BMoF, 2007: 154-55).

For achieving Millennium Development Goals (MDG), emphasis is laid on gender parity, enhancement of enrollment rate, improvement in quality, and management of education for overall development of primary education. As a result, remarkable success in primary education has been achieved. Year-wise (1994-2004) enrollment rate in primary school has shown in the following table (BMoF, 2007: 156):

Table 4: Enrollment of Students at Primary Level, 1994-2004

(fig. in lakh and percent in parenthesis)

Year	Total student	Male student	Female student
1994	151.80	80.48 (53.0)	71.33 (47.0)
1995	172.80	90.94 (52.6)	81.90 (47.4)
1996	175.80	92.19 (52.4)	83.61 (47.6)
1997	180.32	93.65 (51.9)	86.67 (48.1)
1998	183.61	95.77 (52.2)	87.84 (47.8)
1999	176.22	90.65 (51.4)	85.57 (48.6)
2000	176.68	90.33 (51.1)	86.69 (48.9)
2001	176.59	89.90 (51.0)	86.69 (49.0)
2002	175.62	88.42 (50.3)	87.20 (49.7)
*2003-04	184.30	93.59 (50.8)	90.72 (49.2)
*2004	179.53	90.47 (50.4)	89.06 (49.6)

Source: 1) Ministry of Primary and Mass Education
           (Child Education and Literacy Survey 2002)
        *2) Statistical database, DPE 2004
Note: Corresponding figures include Ebtedaya Madrasha students

The Government has been implementing "Second Primary School Education Programme (PEDP 11)" (2003-2009) at a total cost of Tk. 4,933.08 crore with the support of development partners as primary education is challenged by constraints such as insufficient of schools within reasonable distance, poverty of families, and academic performance of the students. The above-mentioned programme has given emphasis on ensuring access of all children to school, create children-friendly environment, improve the quality of primary education, reduce dropout rate, and increase completion of primary education cycle. Under PEDP 11, programmes for construction of 30,000 classrooms, 15,000 additional toilets (for female teachers), installation of additional 15,000 tube wells, repair and expansion of 460 Upazila officers, renovation of 53 Primary Teachers Training Institute (PTIs), construction and extension of academic buildings and hostels, renovation of National Academy for Primary Education have been undertaken. A number of teachers, assistant upazila education officers, computer operators, instructors, will be recruited in this programme (BMoF, 2007:156-57).

Besides, the Bureau of Non-formal Education was set up on 17 April 2005, to conduct non-formal education side by side with formal education. The Government approved the non-formal policy frame-work in January 2006 to make the non-formal education successful (BMoF, 2007:158).

ii) Secondary and Higher Secondary Education

Secondary education starts after primary and immediately preceding to higher (college) education is known as the secondary and higher education. It caters to the adolescents of 11-17 years age group. Secondary education may be divided into three stages, viz., Junior Secondary, Secondary and Higher Secondary. The duration is of three years for the junior secondary (grades 6-8), two years each for the secondary (grades 9-10) and higher secondary (grades 11-12) i.e. (3+2+2) years = 7 years (Hossain, 1985:22; and BANBEIS, 2007:7).

After eight years of schooling (five years of primary and three years of junior secondary) diversification of courses into technical and vocational education are offered in vocational and trade schools which are terminal. Sanskrit and Pali educations are imparted at the 'Tol' after 10 years of schooling i.e. S.S.C. Bangladesh Open University (BOU) also offers S.S.C. course through distance education under the general stream (BANBEIS, 2007:7).

Junior Secondary Education

According to the web site (http://www.moedu.gov.bd/edu_system__edu_structure.htm) of Ministry of education, junior secondary schools offer three grades i.e. class VI, VII and VIII. There are many high schools and a few higher secondary schools which also

offer the courses of junior secondary stage. Junior high schools, in most cases, have primary classes attached to it. All the Junior high schools in Bangladesh are privately managed. Government extends salary support to the teachers and other employees of the Junior Schools.

There is a board named National curriculum and Text Book Board (NCTB) assigned with the responsibility of preparing curriculum and text books for primary and secondary Level. No public examination is held at this stage. Each institution conducts its own examinations. A countrywide scholarship examination known as the 'Junior scholarship' examinations is held every year in class VIII which is conducted by the Regional Deputy Director of Secondary and Higher Education Directorate. Merit scholarships are given to the successful candidates.

Can be viewed at
http://www.moedu.gov.bd/edu_system__edu_structure.htm

Secondary education

Usually, a high school comprises five grades from classes VI to X. Grades IX and X are considered secondary stages. There are many high schools which have classes I to X, II to X, and III to X. Most of the high schools in the country are privately managed. Government high schools are situated mostly in urban areas. Most of the privately run secondary schools provide co-education. Bangladesh Open University (BOU) has been continuing the S.S.C.

examination through distance education. The curricular structure is uniform and consists of Bangla, Mathematics, English, General Science, Social and Religious Studies. National Curriculum and Text Book Board (NCTB) is assigned with the responsibility of preparing curriculum and text books for secondary and higher secondary Level. Diversification of courses and curricula are introduced at class IX, where the students are separated into three streams of courses, viz. Science, Social Sciences, and Business Studies. Class-wise annual examination is held and promotion to next higher class is given if a student gets minimum prescribed marks. The academic programme is intended to be terminal at the end of class X, where the students appear at the public examination called S.S.C. (Secondary School Certificate) examination. Primarily, the programme is directed to the preparation of the students for entrance into the higher secondary stage. The examination is conducted every year by the eight Boards of Intermediate and Secondary Education (BISE) located at Dhaka, Rajshahi, Comilla, Jessore, Sylhet, Barisal, Chittagong and Dinajpur district headquarters. It is worthwhile to mention here that the newly created BISE, Dinajpur, has not yet sent candidates to appear at the S.S.C. examination. Candidates will be sent there in 2009. The results of S.S.C. examinations are being covered into letter grades viz., A+, A, A-, B, C, D, and F. The ranges of marks for these grades are 80-100, 70-79, 60-69, 50-59, 40-49, 33-39, and 0-32 respectively and the

corresponding grade points are 5.00, 4.00, 3.50, 3.00, 2.00, 1.00, and 0.00 (BANBEIS, 2007:8-9).

In case of Bangladesh Open University (BOU), there are two terminal examinations, one is after first year of the academic year and another is at the end of the second year. It may be mentioned here that one can not pass in all papers in the first year final examinations, he/she can appear in the second year final examinations and also can appear in failed subjects of previous year. Aggregating the two terminal results BOU publishes the final S.S.C. result. BOU follows letter grade system in publishing the results of S.S.C.

One of the major weaknesses of secondary education is that it has, by tradition, been looked upon as preparatory to higher education without catering for preparation for entry into vocations. A further problem is high failure rates at the SSC and HSC examination. It is well known that failure in English is the most important factor contributing to high failure in the SSC and HSC examinations (Hossain, 1985:22).

Higher Secondary education

At the higher secondary stage the academic programme for general education is of two years' duration (class XI and XII). Public examination called the Higher Secondary Certificate (H.S.C.) examination is held at the end of class

44

XII. Generally, Intermediate colleges in Bangladesh offer courses of higher secondary level. There are many degree colleges which combine grades XI and XII as well. One of the main objectives of this stage is to prepare qualified students for higher education. Bangladesh Open University has been continuing the H.S.C. programme through distance education. For distance education through BOU there are selected centres where the students are registered in class XI. Students attend the classes on two Fridays in a month but not more than twenty classes in a year. The curricular structure is uniform and consists of Bangla, Mathematics, English, General Science, Social and Religious Studies. National Curriculum and Text Book Board (NCTB) is assigned with the responsibility of preparing curriculum and text books for primary, secondary and higher secondary level. Courses are diversified into Science, Humanities, Commerce, Home-economics, Business Management, Agriculture and Music. BOU also follow the curriculum same as the curriculum of general schooling. Academically, all higher secondary institutions are under the control of Board of Intermediate and Secondary Education (BISE), which grant affiliation to these institutions. Every year all BISE conduct public examination called H.S.C. examination. The Bangladesh Technical Education Board is responsible for conducting the H.S.C. (vocational) and H.S.C. (Business Management) examination. The results of H.S.C. examinations are being covered into letter grades viz., A+, A, A-, B, C, D, and F. The ranges of marks for these grades are 80-100, 70-79,

60-69, 50-59, 40-49, 33-39, and 0-32 respectively and the corresponding grade points are 5.00, 4.00, 3.50, 3.00, 2.00, 1.00, and 0.00 (BANBEIS, 2007:11-12).

In case of Bangladesh Open University (BOU), there are two terminal examinations, one is after first year of the academic year and another is at the end of the second year. It may be mentioned here that if one can not pass in all papers in the first year final examinations, he/she can appear in the second year final examinations and also can appear in failed subjects of the previous year. Aggregating the two terminal results BOU publishes the final result.

iii) Tertiary Education

According to BANBEIS (2007:14), after passing the Higher Secondary Certificate (HSC) examination or equivalent students can pursue as per their ability and aptitude for higher education in pass / Honours Bachelor Degree courses (three years for pass and four years for Honours) in the degree colleges or in the universities, followed by the Masters Degree courses of one year duration for holders of an Honours Bachelors Degree. Duration of Masters Degree is two years for Bachelor degree (pass). The total duration of education from the primary to the highest level counts up, therefore, to 5+5+2+ (3/4+2/1) =17 years in the general education system.

Usually, the Universities (Public and Private) are offering higher education with prior approval of the University Grants Commission (UGC) of Bangladesh. The subjects of higher education are selected by the UGC both for Graduation and Post Graduation Level. Higher education is also offered in different colleges. Some colleges offer only up to Honours courses, some are offering both up to Honours and Masters, whereas some colleges offer only up to Masters without providing Honours level courses.

M.Phil. and Ph.D. courses in selected subjects are also offered in the universities. The minimum duration for M.Phil. Degree is two years and that of Ph.D. is of three years after Master Degree but not more than six years. All the universities either follow course system or semester system in examinations. Bangladesh Open University (BOU) has been continuing degree (pass) programme on B.A. and B.S.S. through distance education. There are six semesters in Bachelors' degree level.

There is an examination wing headed by the Controller of Examination who is responsible for controlling, evaluating, and publishing the respective final results. All the universities have introduced letter grade system for evaluating the examination scripts according to decisions made by the UGC. The system of letter grades are being covered as viz., A+, A, A-, B+, B, B-, C+, C, D, and F. The ranges of marks for these grades are 80-100, 75-80, 70-75, 65-70, 60-65, 55-60, 50-55, 45-50, 40-45, and 0-40

respectively and the corresponding grade points are 4.00, 3.75, 3.50, 3.25, 3.00, 2.75, 2.50, 2.25, 2.00, and 0.00 (BANBEIS, 2007:14-15).

In case of higher level of general education which is held in the colleges and institutes, the National University is responsible for conducting, evaluating, and finally publishing the examinations results.

b. Madrasah Education

Madrasah education was first established in Kolkata in 1780. The present system of madrasah education was inherited in Bangladesh with the establishment of that Madrasah in 1780. This was established aiming at extending Islamic education for the Muslims and also producing loyal civil servants especially for handling judicial affairs in Muslim law in the court. In 1835 English System of Education was introduced in this country and in 1837 the language of the court became English in lieu of Persian. This English system diminished the importance of madrasah education vis-a-vis production of Government servants. Still that system of education is continued progressively as the Muslims responded to the system and many Madrasahs grew up in this sub-continent through private initiative. Since Kolkata University Project (1857) did not include madrasahs within the University system of education, a separate parallel madrasah system up to tertiary level grew up and Government accepted this

system by establishing some madrasahs and also by recognising madrasahs established in private sector.

In the early 20th century, the education system of the Kolkata Madrasah underwent reform. As a result, 'New Scheme' for madrasah education was developed with the introduction of Urdu, Bengali, Arabic, Mathematics, History, Geography, English, Drawings, Hand-works, and Physical-exercises etc. in the curriculum of madrasah education along with religious education. An Islamic Intermediate level was set up in those madrasahs for providing a preparatory stage for the university education. As per the East Bengal Education Committee (Akram Khan Committee) of 1952 all Madrasahs and Islamic Intermediate Level were transformed into secondary schools and general colleges respectively.

The present system of Madrasah education is a parallel system with the general education system which offers Islamic instructions to Muslim boys and girls. The madrasah has the following stages:

Stage	Equivalent level	Duration
1) Ibtedayee	Primary	Five years
2) Dakhil	Secondary	Five years
3) Alim	Higher Secondary	Two years
4) Fazil	Degree	Two years
5) Kamil	Masters Degree	Two years

Class-wise annual examination is held and promotion to next higher class is given if a student gets minimum prescribed marks up to class IX. The academic programme is intended to be terminal at the end of class X, XII, XIV and XVI where the student appear at the public examination called Dhakhil, Alim, Fazil, and Kamil examination respectively. The examination is conducted every year by the Bangladesh Madrasha Education Board (BMEB). The results of Dakhil and Alim examinations are being covered into letter grades viz., A+, A, A-, B, C, D, and F. The ranges of marks for these grades are 80-100, 70-79, 60-69, 50-59, 40-49, 33-39, and 0-32 respectively and the corresponding grade points are 5.00, 4.00, 3.50, 3.00, 2.00, 1.00, and 0.00 (BANBEIS, 2007:19-20).

Other type of Madrasah education

According to the website (http://www.moedu.gov.bd/edu_system__edu_structure.htm) of Ministry of Education, Government of Bangladesh; in addition to the public system of Madrasah education, there are a good number of private institutions of other traditional Islamic teachings for the Muslims. These are known as the Forquania Madrasah, Hafizia Madrasah and Quami or Nizamia Madrasah. Forquania Madrasah offers basic education (maximum four years) on Islam including Arabic language, Quran recitation, elementary Bengali language and simple arithmetic. Hafizia Madrasah is exclusively meant for 'Hifz' or memorising the entire

Quran. Children of the earliest possible age- group join these institutions. Mostly these institutions are residential and attached to a Mosque. Maqtab is another type of Mosque-based institution which serves as 'feeder' schools for Primary and Ibtedayee Madrasahs. Pre-primary and elementary religious courses along with simple Bangla and arithmetic are taught in these institutions. Quami or Nizamia Madrasahs arrange their academic programmes according to grades of one year each beginning from grade I to grade XIV. The grades are named in Arabic. The final grade is called Daurah. Certificates are awarded to the students after completion of the Daurah class.

Can be viewed at http://www.moedu.gov.bd/edu_system__edu_structure.htm

c. Technical and Vocational Education

In Bangladesh, technical education is organised in three phases, viz., S.S.C. (Voc), H.S.C. (Voc), H.S.C. (B.M.), certificate, diploma and degree. This certificate course prepares skilled workers in different vocations spread over one year duration or less after eight years of schooling (class VIII) and the diploma courses prepare the Diploma Engineers, at the Polytechnic and other Institutes. The Diploma course is of one/two/three/four years duration and its admission pre-requisite is a minimum of S.S.C. The S.S.C. (Voc), H.S.C. (Voc), H.S.C. (B.M.) courses are run through the Technical Schools and Colleges or are attached to Schools, Colleges and Madrasahs under

academic control of the Bangladesh Technical Education Board (BTEB).

The Technical School and Colleges (previously it was named Vocational Training Institute) or courses attached to Schools, Colleges, and Madrashas offer Trade Courses of two years duration in different trades for S.S.C. (Voc), H.S.C. (Voc), and H.S.C. (B.M.) training holder. Diploma courses are offered in the Polytechnic (Govt. and Non-govt.) and Monotechnic Institutes of four years duration in various subjects.

Besides, the Institute of Marine Technology and other Technical Training Centres (TTC) run by the Ministry of Manpower are affiliated to the Bangladesh Technical Education Board (BTEB) for academic purposes. Public examinations are held for various types of courses under the auspices of the Bangladesh Technical Education Board and diplomas and certificates are awarded by them.

There are some private institutions under BTEB which offer various courses in different fields. Shatlipi (short-hand) Academy of Dhaka and Badurpur Akbar Ali Khan Technical Institute of Comilla offer short courses for short hand and typing. Two survey institutes, one at Comilla and another at Rajshahi are managed by the respective District Councils which offer overseer courses. Similar other private vocational and trade institutions are registered with the Technical Education Directorate and

affiliated to the Bangladesh Technical Education Board (BTEB) for academic, evaluation and certificate purposes. It is also noted that various types of Diploma courses are offered by the BTEB which is administratively controlled by different ministries (BANBEIS, 2007:27-29).

d. Professional Education

There are different streams in Professional Education, viz. i) Engineering and Technology Education, ii) Agriculture Education, III) Health Education, IV) Law Education, V) Library and Information Science Education.

Engineering and Technology

Engineering education at degree level began in this country when Ahsanullah Engineering College was established in Dhaka. With the establishment of East Pakistan University of Engineering and Technology which is presently known as Bangladesh University of Engineering and Technology (BUET), Dhaka, scope of higher education in Engineering and Technology has expanded. Four BITs (Bangladesh Institute of Technology) have been restructured as an autonomous degree awarding University of Engineering and Technology from where four years B.Sc. course are offered. These universities are Dhaka University of Engineering and Technology (DUET), Chittagong University of Engineering and Technology (CUET), Khulna University of Engineering and Technology (KUET), and Rajshahi University of

Engineering and Technology (RUET). The College of Textile Technology and the College of Leather Technology offer four years degree courses in Textile Engineering and Leather Technology Engineering respectively. Both colleges are situated in Dhaka.

Bangladesh University of Engineering and Technology (BUET) offers as well a five years degree course (Bachelor of Architecture) in architecture after H.S.C. (pre-engineering) followed by a one year M.Arch. (Master of Architecture). There is also a two years M.U.R.P. (Master of Urban and Rural Planning) course after B.Sc. (Engg.). Masters degree holders of selected subjects, viz., Economics, Geography, Statistics, mathematics can also undertake this course. Ph.D degrees are also awarded by the BUET after minimum of three years course work/thesis work following completion of M.Sc. (Engg.) The universities are fully autonomous in character.

The Institute of Scientific Instrumentation under the UGC offers training to technicians for maintenance, repair and development of expensive and sophisticated scientific instruments and equipment used for teaching and research purposes in the universities and colleges of the country. There are two International Universities called the Islamic University of Technology (IUT) situated at Board Bazar, Gazipur, near Dhaka founded by Organization of Islamic Countries (OlC), which is responsible for the preparation of skilled and efficient technical professionals of different

Islamic countries of the world and Asian University for Women, Chittagong accordingly. This institute offers post-graduate degree in different technologies at the higher level. Degree is awarded through course work and practical examinations. All examination results are being converted in letter head grading system which is followed by other universities.

Besides, there are many professional institutes which offer professional certificates, diplomas and degrees. Bangladesh Institute of Engineers, Marine Academy of Chittagong under the Shipping Corporation of Bangladesh, Institute of Cost and Management Accounts, Institute of Chartered Accounts, Institute of Bankers, Institute of Personnel Management, Bangladesh Institute of Management, and Library Association of Bangladesh and similar other associations offer professional ceretificates, diploma, and fellowships etc. after H.S.C/graduation followed by professional training and internships. Ministry of Industry operates mono-textile institutes under the Directorate of Textiles which offer two year course after S.S.C. or equivalent courses (BANBEIS, 2007:33-34).

Agricultural Education

According to the website (http://www.moedu.gov.bd/edu_system__edu_structure.htm) of Ministry of Education, Government of Bangladesh; agricultural education includes education on production,

preservation, processing and marketing system of all agricultural crop, animal-husbandry, poultry farming, livestock, fisheries, pisciculture, planting etc. and simultaneously acquiring knowledge on production of different kinds of crops.

Diversified courses on agriculture are offered at the four agricultural universities in Bangladesh, viz., Bangladesh Agricultural University (BAU) at Mymensingh, Sher-e-Bangla Agricultural University at Dhaka, Veterinary and Animal Sciences University at Chittagong, and Agricultural University at Sylhet. In the university honours (Bachelor of Science Honours) courses in agriculture, animal-husbandry, fisheries, veterinary science, agricultural engineering, agricultural economics are offered and followed by one year Masters Degree courses, also offers Ph.D. courses which are of minimum three year's duration after M.Sc. on selected fields. Government has upgraded the status of Institute of Post-graduate Studies in Agriculture (IPSA) to University as Bangabandhu Sheikh Mujibur Rahman Agriculture University which offers agriculture education and conducts agriculture research. Degrees offered by this university are B.S. in Agriculture, M.S. in Agriculture, and Ph.D. on selected field.

There is a Forest Research Institute at Chittagong where Honours and Masters courses on Forestry are offered. Besides, there is also an Institute under the University of

Chittagong which offers courses in Marine Science of equivalent level. The Ministry of Agriculture operates about a dozen of Agricultural Training Institutes (ATIs) where a three years Diploma Course in Agriculture is offered after S.S.C.

Can be viewed at
(http://www.moedu.gov.bd/edu_system__edu_structure.htm)

Health Education

As stated by BANBEIS (2007:35-41), in Bangladesh there are three types of Health education which are as follows:

i)   Medical, Dental and Nursing Education
ii) Homeopathic System of Medicine and
iii) Unani and Ayurvedic System of Medicine

i)   Medical, Dental and Nursing Education

There are some medical colleges (public and private) in Bangladesh. Some private universities in Bangladesh offer the Bachelor of Medicine and Bachelor of Surgery (M.B.B.S.) degree courses for medical education. Students can pursue a five years M.B.B.S. course offered at the Government Medical colleges and also at some Private Medical colleges in Bangladesh after passing Higher Secondary Certificate examination in science (with pre-medical group of subjects). Academically these colleges

are carrying out their responsibilities under the affiliating University of Dhaka, Rajshahi and Chittagong universities.

There is one Govt. Dental College located at Dhaka, dental units are attached to Rajshahi and Chittagong Medical colleges and a very few private dental colleges offer a four years B.D.S. (Bachelor of Dental Surgery) courses. The faculty of dentistry of Bangabandhu Sheikh Mujib Medical University (BSMMU) is only offering the higher dental medical education. D.D.S. course under Dhaka University, M.S. and M.D.S. courses are offered under BSMMU. Besides this, BSMMU conducts the courses of MCPS and Conservative Dentistry and Endodontics under BCPS.

There are some public and private Nursing institutes all over the country which offer a four years senior certificate course (three-year basic nursing course and one-year midwifery training). There is also a Nursing College in Dhaka which offers a four-year B.N.Sc. (Bachelor of Nursing Science) and B.Sc. Public Health Nursing courses. The Institute also offers the degree on M.Sc. in Clinical Nursing.

There are some Medical Assistant Training Schools (MATS) run by the Government under the Directorate of Health which offer a three years training after S.S.C. (science) or equivalent degree. There are also a number of

public and private institute of Health Technology (Para-Medical Institute) in Bangladesh which offer three year Diploma course in Health Technology, Laboratory Technicians, Radiography, Sanitary Inspection, Pharmacy and Dentistry after S.S.C. or equivalent degree.

In case of higher level medical education on clinical/pre-clinical subjects; Diploma, Master of Science, M.Phil. and Ph.D. courses are offered by different universities (degree is offered by Bangladesh College of Physicians and Surgeons through membership and fellowship examination). Duration of these courses is being from 1-3 years. Universities and BCPS are also functioning mainly for registration, evaluation, and certification in higher medical education.

The courses are offered in different Government Medical colleges as well as the following institutes:

i) National Institute of Cardio-Vascular Diseases (NlCVD), Dhaka
ii) Institute of Diseases of Chest and Hospital (IDCH), Dhaka
iii) National Institute of Preventive and Social Medicine (NIPSOM), Dhaka
iv) National Institute of Opthalmology (NIO), Dhaka
v) Institute for Rehabilitation of the Disabled, Dhaka
vi) Institute of Public Health and Nutrition, Dhaka

vii) Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM), Dhaka

viii) Institute of Child Health (ICH), Dhaka

ix) Institute of Epidemiology, Disease Control and Research (lEDCR), Dhaka

x) National Institute of Trauma, Orthopedics, and Rehabilitation (NITOR), Dhaka

xi) National Institute of Kidney Diseases and Urology (NIKDU), Dhaka

xii) National Institute of Cancer Research Hospital (NICRH), Dhaka and

xiii) Mental Health Institute

All these above-mentioned institutes are affiliated to Dhaka University. BSMMU also conducts the FCPS courses under Bangladesh College of Physician and Surgery (BCPS) other than its own courses.

The Bangladesh Medical Council gives Registration Certificates to the candidates who have passed the M.B.B.S. course and completed one-year internship training. There is an Inter-medical College Board for the purpose of co-ordinating the academic activities of all medical colleges in the country.

ii) Homeopathic System of Medicine

Formal Homeopathic medical education has developed in Bangladesh. For controlling this system a Homeopathic

Board was established in 1965. Subsequently in 1983, Bangladesh Homeopathic Practitioner Ordinance was promulgated. According to the Ordinance, structures and functions of the Board have been reformed and re-determined.

At present, there are more than 30 Homeopathic Medical Colleges in Bangladesh, among these; one Government Homeopathic Medical College is located at Mirpur, Dhaka, offers a five years regular course and others are registered with the Homeopathic Board. Most of these colleges offer night-shift courses. Some colleges have day-shift along with night-shift courses. Courses offered in these institutions are - Diploma in Homeo Medicine and Surgery (D.H.M.S.) and Bachelor of Homeo Medicine and Surgery (B.H.M.S.). D.H.M.S. is a four years course after S.S.C., which is awarded on successful completion of the course. A six months internship course after passing the diploma is compulsory for obtaining a Registration Certificate and practice as a physician. After completion of D.H.M.S., a student can join a two years condensed course in Homeo Medicine and Surgery. On successful completion of this condensed course a degree of B.H.M.S., is awarded. Similarly, a five years B.H.M.S. course in science is offered at the homeopathic colleges after passing H.S.C. examinations. The University of Dhaka has given academic recognition to some of the colleges for awarding degree under its Faculty of Medicine. One year internship course after B.H.M.S.

degree is a pre-requisite for obtaining a Registration Certificate and to work as a homeopathic practitioner.

iii) Unani and Ayurvedic System of Medicine

The traditional Unani and Ayurvedic System of medicine is very popular in Bangladesh. There is a Government recognized Board of Unani and Ayurvedic System of Medicine in Bangladesh. A Government Unani and Ayurvedic Degree College has been established in Dhaka from where a five years degree course is offered. After successful completion of the course a continuing one year internship training course is mandatory. The Faculty of Pharmacy of the University of Dhaka is responsible for all academic purpose and certificate is awarded from the University of Dhaka to successful candidates. There are some private Unani/Ayurvedic institutions which offer diploma courses on D.U.M.S. (Diploma in Unani Medicine and Surgery) and D.A.M.S. (Diploma in Ayurvedic Medicine and Surgery). After completion of four years diploma, one year internship training is required for registration as practitioner. All Unani and Ayurvedic institutions are recognised by the Government.

Law Education

Law education courses are offered in some public and private universities, and in some private law colleges. After H.S.C., a four years L.L.B. honours course is offered

at the University of Dhaka. The duration of the L.L.M. course is one year after completion of L.L.B. honours course. The Rajshahi University offers B. Jur. (Bachelor of Jurisprudence) honours course of three years duration after H.S.C. and M. Jur. (Master of Jurisprudence) course of one year duration after B. Jur. honours courses. Rajshahi University also offers L.L.M. course of three years duration after M. Jur. There is a provision of three years Law courses after the first university degree offered by the different law colleges under National University. The law colleges are privately managed. The National University is responsible for registration of the colleges, academic affairs, supervision, controlling the examination and publishing the results.

Library and Information Science (LIS) Education

Training course on Librarianship in Bangladesh started in 1952. A three-month training programme in librarianship was launched at the Dhaka University Library by Late Fazle Elahi, ex-Librarian of Dhaka University. The course was discontinued after one session as the University authority was not then in a position to act for the training of library personnel on urgent basis in the newly created state of Pakistan (Chanda, 1958 : 12; Siddique, 1965 : 256). Apart from the higher training facilities under the Technical Assistance Programme of the Colombo Plan in 1953-54, four 3-month subject-wise training were conducted between 1955 and 1959 (Mannan, 1997:109). A

regular certificate course on librarianship of six-month duration introduced at undergraduate level in 1958 led by Late M.S. Khan, former Librarian of the University of Dhaka Library, as Director. That might be the foundation of regular library education at undergraduate level in Bangladesh. Success of the courses convinced Dhaka University authority, which finally led to the institution of one-year post-graduate diploma course in Library Science at the University of Dhaka under the guidance of Late M.S. Khan. Advancement of librarianship in Bangladesh was started when the first post-graduate Diploma course in Librarianship was introduced during the session of 1959-60 at the University of Dhaka by its former Librarian Late M.S. Khan. He followed the model of the University of London. LIS education is still growing in Bangladesh from that session. In LIS education, from Certificate Course to Ph.D. degrees are offered in the education system of Bangladesh. B.A./B.S.S. (Honours) and M.A./M.S.S. Degrees in LIS are offered by the two universities, such as, the University of Dhaka and Rajshahi University. Post-graduate diploma courses are offered by sixteen institutes. Dhaka and Rajshahi Universities offer M.Phil. At the same time, Dhaka University also offers Ph.D. Degree in LIS education. Recently, there are some private universities have been offering different Level of education in LIS in Bangladesh. Gradually, the schools/institutes of LIS are increased but quality education is yet to be achieved. However, senior practicing librarians and professionals are playing a very

significant role in the development of LIS education (Hossain, 2006:54).

Details about the types of courses are given below.

The Library Association of East Pakistan (currently known as Library Association of Bangladesh) started an undergraduate Certificate Course in 1958. The duration of the course is six months. Those who have higher secondary certificate or equivalent certificate are eligible to get admitted into the course. Presently, Institute of Library and Information Science is offering Certificate Course under the guidance of Library Association of Bangladesh (LAB). University of Science and Technology Chittagong (USTC), one of the private universities in Bangladesh, is offering Certificate Course in LIS producing Library Assistants for medical libraries (Hossain, 2006:55).

Department of Library Science was established in 1959 at the University of Dhaka. In 1959-60, the first one-year Post-graduate Diploma was started at the University of Dhaka under the direction and guidance of late M. S. Khan. The LAB began one- year Post-graduate Diploma in LIS during the session of 1989-90. Rajshahi University also started the diploma course in 1991. There are some institutes are offering one-year Post-graduate Diploma in LIS under the National University. These institutes are producing sub-professional in library science profession.

These institutes' infrastructure facilities are not satisfactory and most of them do not have full time faculty members. Besides, two private universities, i.e. Darul Ihsan University and International Islamic University of Chittagong, are now offering one year post-graduate diploma in LIS. There are some colleges in Bangladesh are offering LIS education as an optional subject in B.A. (pass) level under the National University of Bangladesh (Hossain, 2006:56).

The University of Dhaka launched three-year BA (honours) in 1987-1988 and the name of the Department was changed from Library Science to Library and Information Science. To cope and keep pace with the Information Communication Technologies (ICTs) and modern world, the University organized a four years integrated (Hons) course from the session 1997-98. It is also significant that the name of the Department was again changed and renamed as Information Science and Library Management (ISLM) in 2001. In 1992-93, Rajshahi University began three-year B.S.S. (Hons) course in LIS. That course has been converted into four year course in 1996-97 at the University of Rajshahi. One private university namely Uttara University introduced a four years B.A. (Hons) course in Library and Information Science. But due to high tuition fees and other expenditures of the University, it did not get minimum number of students to sustain the progrmme (Hossain, 2006:58-62).

The University of Dhaka and the Rajshahi University are offering one year Master's Degree in LIS. Royal University of Bangladesh is offering two-year Master's degree in LIS. After the liberation of Bangladesh, from 1975-76 academic session, the University of Dhaka started an M.A. preliminary course, a two years master's degree course in Library science. They stopped two-year master's degree programme in 1994-95 and carry on one-year master's programme for the honours graduate students in LIS. The University of Rajshahi started one-year master degree programme in 1995-96 session. Those who acquired 55% marks or above marks in their honours final examination can have the thesis paper. Lalmatia Girls College of Dhaka started a two years master's programme in LIS in 2002-03 session under National University (Hossain, 2006: 62-4).

A few years ago, the University of Dhaka again began a two years master's degree programme in LIS, i.e. M.A. evening programme for the professionals those who have already completed post-graduate diploma in LIS in 2004. This programme is kept open for all graduates since 2005-2006. Also open for those Honours graduates who have completed certificate or post-graduate diploma course (Hossain, 2006: 64).

M. Phil. (Master of Philosophy) programme is offered by the University of Dhaka after completion of one year M.A. degree in LIS. The University of Dhaka approved Master

of Philosophy in LIS during the 1975-76 session but it began in the session 1976-77. Duration of the M. Phil. course is two years. One year is for course work and another year is for thesis. Rajshahi University also commenced a two years M. Phil. Programme in 2005-2006 session (Hossain, 2006:65-6).

Doctor of Philosophy (Ph.D.) degree is offered in Library Science from 1978-79. This Ph.D. degree was approved by Dhaka University. As per ordinance and regulations of the University of Dhaka, a candidate is to submit a thesis on approved topic in Library and Information Science within two to five years of research work after registration at the University of Dhaka for Ph.D. degree (Ahmad, 1987:213).

Role of Professional Associations in LIS education

The Library Association of Bangladesh (LAB) sponsors the Library Training Institute (currently known as Institute of Library and Information Science) which offers courses on Library and Information Science, training programmes, and supports continuing education opportunities for librarians through workshops, seminars and symposia's. The Association publishes the journal titled *Eastern Librarian* twice a year and a quarterly newsletter titled *Upatta* in Bangla. At present, unfortunately, publications of *Eastern Librarian* and *Upatta* have been discontinued for a long time for unknown reason. In 1986, a complete

professional association – Bangladesh Association of Librarians, Information Scientists and Documentalists (BALID) emerged with a commitment to the development of library profession in Bangladesh. BALID also engages in arranging seminars, training programmes, and publishing newsletter *Informatics* at irregular interval (Mannan, 1997:110-111).

e) Teacher Education

Different types of teachers' training have been arranged for different level of teachers in Bangladesh, viz., (i) Primary Teachers' Training, (ii) Vocational Teachers' Training, (iii) Physical education, (iv) Technical Teachers' Training, (v) Teachers' Training, (vi) Madrasah Teachers' Training, (vii) Higher Secondary Teachers' Training and (viii) Others' Teachers Training (BANBEIS, 2007:45).

Teachers' training of one year duration is conducted at Primary Training Institutes (PTI). The National Academy of Primary Education (NAPE) is responsible for conducting examinations after one year of training in the PTI and offering certificates of education (C-in-ED) to successful trainees.

There is only one Vocational Teachers' Training Institute (VTTI) offers two degrees of which one is certificate in vocational education of one year duration and another is Diploma in vocational education of one year duration.

After successfully completion of the certificate course, one can take admission in the Diploma course.

Physical education is offered at Physical Education College (public and private). At present there are four Government physical education colleges situated in Dhaka, Rajshahi, Chittagong, and Bagerhat. Also two Government physical colleges are under construction, very soon they will start their academic programme. Government and private physical education colleges offer one-year Bachelor of Physical Education (B.P.Ed.) after first University Degree. All Government physical education colleges are under the Ministry of Youth and Sports Development for financial management. On the other hand academic purpose, examination and administrative function of both public and private physical colleges are controlled by the National University. Moreover, physical education is being offered by a very few number of private universities which offer B.P.Ed. degree as well as M.P.Ed degree of duration one year. From the year 2008-2009, Government physical colleges also introduce M.P.Ed. course.

Dhaka Polytechnic Institute was established in 1955. With the establishment of that Institute, one department for teachers' training was opened in this Institute. The necessity of teachers' training was felt in the early sixties following the increase of the number of Polytechnic Institutes. As a result, the Department of teachers' training

of Dhaka Polytechnic Institute was upgraded to Technical Education College in 1964. This college offers one-year Diploma-in-Technical education and two-year B.Ed. (Technology) course for the in service teachers (Technical Diploma Holders) of the Polytechnic Institutes. Later the name of this college was changed to Technical Teacher's Training College (TTTC). This College also offers in-service short courses for the teachers of the polytechnic institutes and VTIs. Only the diploma engineers can take admission in diploma course and after completion of diploma course one can get admission in B.Sc. course.

Government and Private Teacher's Training Colleges in the country offer one year B.Ed. course for the teachers of Schools and Madrasahs and pre-qualification for this course is the first university degree or equivalent. Mostly in service teachers are being trained in this course. Limited quota for outsiders has also been kept. In some of the Teacher's Training Colleges B.Ed. courses after H.S.C. and M.Ed. courses for B.Ed. degree or diploma holders is also offered. The apex institution for teacher education is the Institute of Education and Research (IER), Dhaka University, where a four years Honours and Master course on education and one year diploma in education course in various disciplines are offered to the university graduates followed by one year M.Ed. course. Three years Ph.D. in education course is also offered by IER to M.Ed. degree holders. Some private universities also offer B.Ed. honours and M.Ed. courses.

In-service Teachers Training for Madrasah Education is offered by the only Bangladesh Madrasah Teacher's Training Institute (BMTTI) located at Board Bazar Gazipur. Teachers having at least Fazil degree are illegible for this course. Some subject based training are also offered to the concerned Madrasah Teachers.

Higher Secondary Teachers Training Institute (HSTTIs) conduct in-service training for the college teachers. There are five institutes in the country located at Barisal, Comilla, Khulna, Rajshahi, and Mymensing.

The National Academy for Educational Management (NAEM) is responsible to conduct in-service short-term training course on different subjects/disciplines for both secondary and college teachers and of educational administrators. At present, NAEM is conducting training of all officers of Bangladesh Civil Service (Education) Cadre (BANBEIS, 2007:45-48).

f) Specialized and Special Education

According to BANBEIS (2007:51-54), specialized and special types of education exists in Bangladesh. Different types of special education are described below.

Sanskrit and Pali Education

Sanskrit and Pali education is imparted normally in the general schools as a Hindu religious subject, in colleges as

an optional subjects and in universities as a subject for higher education. Sanskrit and Pali are elective subjects at all stages of Secondary, Higher Secondary and Degree Level of education. The Universities of Dhaka and Chittagong offer Honours, as well as Master courses in Sanskrit and Pali. Traditional system of education Pali and Sanskrit are taught at the privately managed institutions called the Tol/Chatuspathi/ college in Bangladesh.

Education for the Physically handicapped and mentally retarded

The Government of Bangladesh has taken many programmes for the welfare of the handicapped and retarded children. It has been observed in a study that at least one baby is found to be physically handicapped and mentally retarded amongst every ten new born babies in the world. Either the baby is blind, or deaf and dumb or mentally or physically retarded. In consequence, fairly a large section of school children are identified as the 'children with special educational needs'. It is meant that educating these children requires special care and attention to the students including adaptation of appropriate teaching techniques. Rehabilitation of these children may need medical care and facilities, special kind of education and training. For this purpose, a number of organizations in Bangladesh are established for taking care of the welfare of the children with special educational needs.

Education and Training System for the Blind

Blind Schools: The Social Welfare Directorate of the Government of Bangladesh runs five Blind Schools for the education of blind children. All these schools are located in four districts namely, Dhaka, Chittagong, Rajshahi and Khulna. These schools offer education for the blind children at the primary level up to class V by Braille System. They use Braille system to teach blind children. In addition, students can also receive various vocational training and studies in music.

Integrated Education System for the Blind: Under the Social Welfare Department the Government of Bangladesh has started a programme called Integrated Education System for the Blind. Thus the blind children may avail the opportunity of getting education simultaneously with those having normal eye-sight of their age. With a view to achieve this objective, recently, a Braille Press has been established in Dhaka with foreign aid and assistance.

About Blind Training and Rehabilitation Programme: Four training centres have been started at the divisional headquarters of Bangladesh for vocational training of the adult blind people of Bangladesh. On completion of the training courses, the graduates become eligible to be employed in the nearest industry with the help of the Placement Services Branch of the training centres.

Non-Government Programmes: Bangladesh National Society for the Blind (BNSB) established a vocational training centre at Mirpur with the assistance of a General Institute for the Blind. This centre offers training on weaving, wood-work and book-binding for the blind children.

Education and Training System for the Deaf and Dumb

Government Programmes:

Deaf and Dumb Schools: The Social Welfare Department of the Government of Bangladesh established Deaf and Dumb Schools in five divisional headquarters of Dhaka, Chittagong, Rajshahi, Khulna, Sylhet and two district towns of Chandpur and Faridpur. In these schools primary level education, courses on drawing and vocational training are offered for the deaf and dumb children.

Adult Training and Rehabilitation: In the above-mentioned schools, there is a separate system consisting of different vocational training for adult deaf and dumb people. These centres are known as Training and Rehabilitation Centres for the physically handicapped.

Employment Rehabilitation Centre: It is a vocational training centre for the blind and located in Tongi very close to Dhaka district. Moreover, the centre is engaged in determination of intensity of deafness, and offer proper treatment for the deaf people. They also manufacture

hearing aids – an instrument used by the deaf person for improved hearing.

Non-Government Programmes: Different voluntary organizations of the country established four schools for the deaf children at Brahmanbaria, Dhaka, Bogra, and Mymensingh. These schools usually offer vocational training.

Education and Training for the Mentally Retarded Children

At present, there is no special school and training centre for the mentally retarded children run by the Government in Bangladesh. But a few voluntary organizations have taken training programmes for the mentally retarded children of the country. The Society for the Care and Education of Mentally Retarded Children (SCEMRC) started special education class for the 5-15 years old children in a regular school. The school also looks after training on arm-circulation, technique on exchanging social feelings and views of the children. This organisation has been working in this field since 1982. In 1984, Bangladesh Retarded Foundation established a special school for the retarded in the city of Dhaka which is known as 'Kalyani'.

Can also be viewed at

http://www.moedu.gov.bd/edu_system__edu_structure.htm

Expatriate Students in Higher Education

Foreign students are entertained to pursue studies in the universities of Bangladesh, especially in the fields of Agriculture, Medical Science, Engineering, and Language Studies. A good number of foreign students get admitted into various courses of the Universities. Most of the students are from the developing countries of the world. Admission into different universities is slightly different (BANBEIS, 2007:57).

Education Management

It has been described in the website (http://www.moedu.gov.bd/edu_system__edu_management) of Ministry of Education, Government of Bangladesh, that the whole education system of Bangladesh is managed and administered by two Ministries of the People's Republic of Bangladesh. One is Ministry of Education (MoE) and the other one is Ministry of Primary and Mass Education (MoPME) Division in association with the attached Departments and Directorates with a number of autonomous bodies.

The main job of the Ministry is to make policy, plan, monitor, evaluate, and execute plans and programs related to post primary, secondary and higher education including technical and madrasah education. The line directorates, viz. Directorate of Secondary and Higher Education and

Directorate of Technical Education are responsible for management and supervision of institutions under their respective control. The Directorate of Technical Education (DTE) Office is responsible for the management and administration of technical and vocational institutions like polytechnics, monotechnics and other similar types of institutes. DTE has Inspectorate Offices at the Divisional Headquarters. Bangladesh National Commission for UNESCO (BNCU) is working as a corporate body within the MoE. The Minister of Education and the Education Secretary work as Chairman and the Secretary-General respectively of this Commission. The Commission consists of 69 members comprised by eminent educationists and intellectuals interested in educational, scientific and cultural fields of the country. In order to follow the Government policy of decentralization the accounting function of the MoE is done by a separate accounts office i.e. Chief Accounts Office (CAO) under a Chief Accounts Officer (C.A.O).

In addition, the following Staff Departments/ Professional Bodies of the MoE perform specialized functions assigned to them:

National Academy for Educational Management (NAEM) is an apex training institution under the MoE. This academy is responsible for providing foundation training to BCS (general education) cadre officers. NAEM also provides in-service training to senior educational

administrators and teachers of the secondary and higher secondary Level. National Curriculum and Textbook Board (NCTB) is an autonomous body under the Ministry of Education (MoE). NCTB is responsible for the development of curriculum, production and distribution of textbooks at primary, secondary and higher secondary Level. Bangladesh Bureau of Educational Information and Statistics (BANBEIS) is accountable for collection, compilation and dissemination of educational information and statistics at various Level and types of education. It is the main organ of the MoE responsible for collection and publication of educational data and statistics. This office also acts as the Educational Management Information System (EMIS) of the Ministry. It also works as the National Coordinator of RINSACA (Regional Informatics for South and Central Asia). Directorate of Inspection and Audit (DIA) is responsible for inspection and audit. The aim of DIA is to improve the standard of education of the Non-Governmental institutions at the secondary level.

Seven Boards of Intermediate and Secondary Education are responsible for conducting the public examinations such as Secondary School Certificate and Higher Secondary Certificate level public examinations. The Boards are also responsible for the recognition of the non-Government and private sector educational institutions. Madrasah Education Board is responsible for conducting public examinations from Dakhil to Kamil Level. The Board is also responsible for the recognition of the non-

Government madrasahs. Technical Education Board is assigned to conduct certificate and diploma examinations in technical education. The Board acts for the recognition of the non-Government technical and vocational educational institutions.

Non-Governmental Teachers' Registration and Certification Authority (NTRCA) has been established in February 2005. The aim of the NTRCA is to conduct examination for the registration of successful candidates who would be eligible for appointment in the non-Government educational institutions. It has been created by the Government with the objective of improving the teaching quality of the non-Government secondary, graduate and post graduate level teachers excluding public and private universities.

Can be viewed at
http://www.moedu.gov.bd/edu_system__edu_management.htm

Furthermore, a number of autonomous bodies have a share in the administration of education. These are:

The University Grants Commission (UGC) of Bangladesh is responsible for supervision of the public and private universities and allocation of Government grants to public universities. The establishment of UGC in 1973 was considered as a milestone in the field of higher education. The UGC plays a significant role as a buffer or a mediator between the Government and the Universities engaged for

the development of higher education in the country (Mannan, 1997: 89).

National University is a public affiliating university. It is responsible for academic control of all the affiliated colleges offering courses in graduate level Pass, Honours and Masters. It is also accountable for conducting Bachelor Degree and Masters examinations (UGC, 2006: 70).

Bangladesh Open University (BOU) was established by BOU act 1992. BOU is the only public university in Bangladesh which teaches education in distance mode. In this method of teaching, the learners are not required to come to the University campus, rather the University teaches them through its regional resource centres (BANBEIS, 2007:64).

The Directorate of Primary Education (DPE), National Academy for Primary Education (NAPE), Compulsory Primary Education Implementation and Monitoring Unit (CPEIMU), Bureau of Non-formal Education (BNFE), under the Ministry of Primary and Mass Education (MoPME) are engaged in executing policies laid down by the Ministry (BANBEIS, 2007:66-7).

The Ministry of Education deals with post primary education like secondary, higher secondary, technical, madrasah, and tertiary education. According to the

statistics published by Bangladesh Bureau of Educational Information and Statistics (BANBEIS) of the Ministry of Education, recently (2006) there were 19,766 secondary schools, 1302 general colleges, 9051 madrasah, 117 polytechnic institutes, 64 vocational training institutes, 24 public universities, 54 private universities, and a variety of other educational institutions in Bangladesh. According to provisional data published in 2006, there are 80,81,956 students at lower secondary and secondary Level, 10,07241 at college level and 29,45,824 students at madrasah level (BMoF, 2006: 158).

Setbacks with Higher Educational Institutes

There are many degree colleges, professional colleges, and universities are offering higher education in the country. But problem exists with them. One of the most serious problems in the field of higher education is that its expansion during the past decades has been completely unrelated to the manpower needs of the country and that its enormous growth has been possible at the expenses primary, secondary, and technical sectors. A feeling has grown that a university is a place to keep the young people off the labour market. Secondly, within the higher education system there is a serious imbalance nearly 70% of all enrolments being in the arts and humanities. Thirdly, in spite of the high cost of university and college education, the overall performance in terms of quality and output of this sector is extremely poor. The dropout or

failure rates in B.Sc., B.Com (Hons) and pass are very high (Hossain, 1985: 24).

Education Budget

Since emergence of Bangladesh more importance has been given to the education sector. Total national education budget for the fiscal year 1995-96 was taka 2,149.37 crore, whereas this amount stood at taka 5,071.85 crore in 2004-05. A comparative study on national revenue budget for education and budget for the public universities is shown at the following table (UGC, 2006 : 32).

Table 5: A comparative study on national revenue budget for education and budget for the public universities is shown below from fiscal year 1995-96 to 2004-05:

(figure in crore taka)

Fiscal year	National budget	National education budget	Education budget for the universities	Part of university (%) in education budget	Part of university (%) in national budget
1995-96	21627.61	2149.37	171.39	7.97	0.79
1996-97	21015.61	2295.54	181.70	7.92	0.86
1997-98	23994.19	2695.74	196.16	7.28	0.82
1998-99	28949.82	2975.70	217.76	7.32	0.75
1999-00	30218.71	3256.76	255.57	7.85	0.85
2000-01	34597.00	3587.46	288.67	8.05	0.83
2001-02	35479.29	3738.97	293.57	7.85	0.75
2002-03	39945.54	3960.39	323.53	8.17	0.81
2003-04	46263.62	4474.80	389.85	8.71	0.84
2004-05	50903.11	5071.85	437.50	8.63	0.86

As financial support, the Government of Bangladesh invested a lot roughly Tk. 2,000.00 crore for 4,74,563 teachers and employees. These teachers and employees are engaged in 28,115 post-primary non-Government educational institutes of the country including schools,

colleges and madrasahs. This amount is approximately 79 percent of total revenue budget distributed for the Ministry of Education. It is better to mention here that Tk. 2,089.33 crore has been allocated as financial support for the teachers and employees of non-Government institutes in the revised budget of FY 2004-05 (BMoF , 2007 : 206).

Education commissions

Since the independence, the Government of Bangladesh has established several education commissions in the country for improving the education systems. Bangladesh Government always gives highest priority to make education sector best among all sectors in the country although the Government has so many resource constraints.

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Chapter III

PRIVATE UNIVERSITY EDUCATION IN BANGLADESH

The economy of Bangladesh is growing steadily. Its future is largely dependent on the quality of its human resources. There is no alternative of education for making quality human resources. Different types of education, such as primary, secondary, and higher education, exist in Bangladesh. The traditional higher education has failed finding to its position in the colonial structure of the society and its failure to link with the post-independence society. Serious thought was given by the intellectual group of the country to overcome the hurdles of traditional higher education and finally, higher education in the private sector has been unlocked.

Situation of Education in Post-liberation Bangladesh

Bangladesh was liberated in 1971. After the liberation of Bangladesh, more than 95% of schools and colleges were established and maintained by the private initiatives. At that time, the Government took an initiative to bring under state payroll and maintenance over a hundred thousand teachers and their institutions. This initiative was taken as a patriotic feelings without defining a policy or waiting for the recommendations of the newly set-up national commission on education headed by Dr. Kudrat-i-Khuda. It was clear that the initiative was viewed as a response to

local pressure for buying political support. By the end of 1982, it was found that the Government provided salary support to 305,000 teachers of non-government schools. A large group of teachers were recruited to fill in the deep vacuum created by the mass departure of Hindu teachers following the partition of India in 1947 on communal lines. But the majority of them were very poorly qualified to teach students (Haq, 1997:18).

By 1983, the Government raised salary support up to 70% for non-government teachers. Whenever the government moves to increase its education budget in national budgetary allocations for the non-government sector, most of the times it was observed that a large portion of the budget was eaten up by its salary. To increase the teachers' payroll, the Government has been under constant pressure although the nation continues to carry the burden of as high illiteracy as nearly 75% even after 25 years of independence. At all levels, education has not only become hollow and costly, it has also become irrelevant for the purpose of preparing the future generations (Haq, 1997:18-19).

In Bangladesh politics, the role of education is a serious delusion in the attempt to understand the deep crisis in education, which is disturbing the social and economic progress of the nation. Everyone would agree the crucial political role played by the students in the language movement, the war of liberation and in the restoration of

democracy but that is not at all an academic role. It is perhaps an inactive outcome of a dysfunctional educational experience. There are a few students, if any, enter higher educational institutions for politics, which most of them appear to leave it as soon as they find alternative paying jobs. Sometimes students take time in politics to improve their future employment prospect. This is true that there are not enough political jobs in the country. In the job scenario, 80% of university graduates take more than two years to secure their first jobs, most of which are unrelated to their fields of academic specialization (Haq, 1997:19).

Politics and Students' Role in Higher Education

"The prospects of private higher education in Bangladesh is inherited an educational structure hollowed of qualified human resources. Those who progressively filled the vacuum, either as teachers or students, were torn between focusing on the search for knowledge or becoming instant politicians − conflicting values inherited from their association with the freedom movement till 1947 and the Bengali independence movement since. During the 1950s and '60s, the higher education base was limited to a few pre-Pakistan period premier colleges and Dhaka University, and from the late '50s, Rajshahi University. The tradition of searching for knowledge dominated the community of scholars. They prided on their past collaboration with scientists and academicians belonging

to top British and American universities. But while the universities in the West moved ahead in knowledge building and technological development, Bangladeshi academics remained mired in the presumed glory of the past. Students who involved themselves with politics during this period were primarily motivated by concerns of ideology or issues of national and cultural identity. A number of first class students who went on to earn distinctions in later life were active in student politics (of the time)**" (Sobhan, 2000).

After independence, a serious crisis appeared in Bangladesh politics. A large number of students were dragged into the firestorm, which often marked by bloody turmoil. Every political party had the funds to maintain a student cadre mainly to act as campaign workers. The students were used to make agitation and forced to bear any violent consequences. Hard cash was used to buy their loyalty, and many residential halls have been turned into virtual weapon stores and centres of operation for non-student musclemen. The cash money and arms opened routes to drugs, women, and big money. Law and order was run under political patronage. A qualitative difference was found in the students' participation in politics in pre- and post-independence Bangladesh. Those who are more conscious and relatively better students on ideological grounds, they actively participated in students politics in pre-independence. Students' participation in the politics in the post-independence is indiscriminate and chaotic. As a

result, frustration and anarchic atmosphere in education were visible. Thus, the quality of education deteriorated, and growth of the national economy fell down, so employment market could not expand for the young people. A few jobs were created which required graduate or professional level competence. On the other hand, the present higher education is unable to provide competence for graduates to be self-employed or entrepreneurial or to work in new fields which they themselves might develop (Haq, 1997:19).

On campus politics and the Government's reaction from outside make many groups among students who do politics, increase inter-group disagreement, and decompose in academic discipline. The dire consequences are the delay for successful completion of studies. This is described as sessions jam (i.e. overcrowding of sessions within the same academic year). The burden of those consequences falls on students whose graduation is often delayed up to three years and also upon their guardians who have to maintain them through the extended period. Since there is no extra-curricular programme on the campus for this extended period, the students might become tempting to involve themselves in self-destructive or anti-social activities. No nation can make its own grave for destroying its own potential human resources (Haq, 1997:20).

Another unavoidable outcome is the failure rates. Bangladesh is one of the developing countries where it has the lowest enrollment rates at higher education of the corresponding (18 to 23 years) age-group. This rate for developed countries is over 30, and in the United States over 50. Question raises about the cost of higher education. The average public cost per university student is about Tk. 25,700 per year. There is no estimate of private costs borne by the guardians. Better-off families transfer a sizeable amount of own funds from personal account to relative's account abroad for educating their children. The politics of education sees ignoring the state cost of education that perhaps the highest per-capita investment has in the private higher education sector in the country. Very low success rates at the college level and unemployment of graduates indicate that a huge wastage of public fund as 80% of the emoluments of all college personnel are borne by the state and that most institutions also enjoy government development grants. Simultaneously, there is a huge loss of private wealth (Haq, 1997:20-1).

A New Look in Higher Education

According to Haq (1997:24), teaching, research, and application of knowledge and skills are considered the most important functions of the University for the greater Interest of society. Since the research and application of knowledge work together, these make higher education both international and adaptive. At least for hundred years

it has been shown in Europe and North America universities that they have a great capacity to become accustomed to advance development. Today, there is no doubt between what might be taught in higher education and in trade/vocational schools. There is a great demand on education to improve the skills in the employment to support modernization and to remove prejudices about vocational or technical education. There is also demand, at the same time, to increase cultural understanding for achieving a better quality of life. In the product sense, higher education is considered a 'commodity' which must meet and create its own demand.

Causes of Failure in Running Public Universities

Lacking of knowledge and basic education lead students to misuse their energy and express their frustration through conflict, factionalism, and campus violence. It has intensified students leaving university who are unable to perform their academic functions. This has also led to course overloading and session jams. The price of overloading and session jams is paid by students and their guardians who, of course, support their children through the extended period. Overcrowding of academic sessions resulting from undue delay in admission, unscheduled suspension of studies and examinations and severe shortage of teachers have been a chronic problem for many years. For that, a three-year honours course often takes 5-6 years to complete. Between 1980 and 1987, Dhaka University remained closed for four years and a

half, the University of Engineering and Technology for about one year and four months, and the Rajshahi University for about eight months. It is not a matter of wonder that many students become troublemakers and easy recruits for political agitation. Now the question is how to make bigger limited government resources available for the universities to take up an increased number of school graduates. Many of whom prove their ability to benefit from higher education. It is obviously true that the rising surge for higher education cannot be contained by 'tending the wounds and mending the fences' of the existing government universities. This supports strongly in favour of establishing private universities in Bangladesh. Usually, several hundred private universities in Japan take up over 90% of almost half a million candidates every year (Haq, 1997:24-5).

Often the campuses turn into battlefields with free play of modern firearms due to politically-engineered acts of violence. Sometimes it has claimed the lives of promising youths since liberation. Lack of discipline has become common obstruction for the learning process. Even the President of the country has made repeated requests to the political parties to dismantle their student wings for re-establishing academic peace and allow unobstructed academic atmosphere of learning. A small number of positive steps have, however, been taken to stop recurrence of such violence (Haq, 1997:26).

Inspiring Ideas on Private Initiatives

According to Khan (2007), educational development in different countries varies in accordance with the political background, culture, and religion of the people, and economic means and objectives. Greece was the first state in the world where education was institutionalized for its citizens. As early as the 5th century BC, the residents of Greece sent their sons to schools up to the age of 14 years and attained near total male literacy (Castle, 1989: 35). The purpose was political, to secure a republican form of government through an elitist community.

According to the Bangladesh Ministry of Education (1984), a good number of students are today involved in drugs, women, big money, and extortion. Those so involved may well set up a small number compared to the vast majority, who wish to enroll in colleges and universities for preparing their future. But on account of violence on the campus, classes are postponed, examinations are delayed for months and years, and there is a high rate of failure in examinations.

At present, existing political parties are not interested for any remedial action with regard to such involvement of students in politics. Although the President of the Republic repeatedly appealed to political parties to disband their student wings (Khan, 2007).

As stated by Khan (2007), during the Pakistan period, the bureaucrats ruled the country. No wonder that the brighter students preferred a career in the civil service, though in every successful batch there were some candidates in teaching profession prior to joining the superior civil service. The bureaucrats, they see themselves as superior to their political bosses; they even, sometimes, spoiled attempts at reforming their own service. So, the ethics of the bureaucrats became questionable, and many of them became politicized. Since they are holding the superior posts of high administrative authority, they are reluctant to collaborate and cooperate with civil society. After independence, the economy of the country was largely dependent on foreign assistance. This assistance was negotiated by government bureaucrats. This development assistance normally deals with a human resource development component. Two types of project are made -- one is small project and another one is big project. Opportunity for training remains in both the types of projects including building of institutions to undertake different and specialized training in the country. But none of these opportunities came for the Bangladesh universities. Public confidence in higher education has been reduced day by day due to the bureaucratic control of higher education and the unwillingness of political parties to disenfranchise their student wings. Senior bureaucrats, wealthy parents, and politicians have silently stopped sending their children to public schools and universities in the country. Since the late 1980s, this class has

progressively found that they educate their children in private English medium schools following the curricula of University of London or the University of Cambridge. Learning English is comparatively recent; there are only half-a-dozen secondary schools that offer a national curriculum in the English medium.

It has been observed that thousands of students at the post-secondary level leave the country every year under a diversity of different programmes. Postgraduate study in abroad is nothing new but undergraduate study in abroad is completely a new phenomenon in the country. Most undergraduate students are admitted to India and then the USA. The investments are justified against the prospects of future employment and migration. Considering these facts, any individual might think that the elite and upper-middle classes have practically privatized education for their own needs. Many businessmen still would like to invest their money in the private education sector, although the Government has also been increasing its education budget every year (Khan, 2007).

Despite all the problems mentioned above, Bangladesh has realized a lot in its self-governing development and in the fields of social and economic growth. The country's key development plan is to ensure wellbeing of human resources. To attain overall economic development, the Government of Bangladesh is continuing its endeavor to improve the living standard of the poor. For that purpose, the Government is

implementing a three-year plan titled 'National Strategy for Accelerated Poverty Reduction' (NSAPR). Education, training, and social development activities are the main areas of human resources development. The Government is giving more emphasis on social sector investment, particularly on education and health sectors as these are the basis of human development. The Government is giving education sector top most priority, as this area has been receiving the highest budgetary allocation for the last couple of years (BMoF, 2007 : 153).

Several non-governmental organizations came forward to provide a back-up with the Government in developing and expanding the education programme in the country. BRAC is one of them, which plays an important role to educate poor, rural students, particularly girls who have either dropped out or left out of the formal education system. BRAC's Non-formal Primary Education (NFPE) programme is currently known as BRAC Education Programme (BEP). BEP started its programme as a part of the Rural Development Programme of BRAC in 1985 with 22 one-room schools. By 2006, the number grew more than 52,000 units across the country, which included primary and pre-primary schools with an enrollment of over 1.5 million disadvantaged children, of whom 65% were girls (BRAC, 2007: 22).

Both Sargent Report in 1944 and first Bangladesh Commission Report in 1975 had recommended that the

administrative costs should not exceed 5% of programme costs. At present, the public and private (for profit) sectors are active in secondary education whereas higher education is being forced into generating profits for continued existence. On the other hand, the role of the private sector in both secondary and higher education sectors is a sensitive political issue in South Asian countries. Those who ideologically favour central planning and public intervention in institutional development are incompetent about measures to encourage entrepreneurship in education, whether for profit or for non-profit.

Bangladesh is burdened with a large population density 32 times that of the United States. It faces a great task of developing its human resources. A renowned economist, with decades of experience in economic planning, recently remarked that 'more than capital and natural resources, knowledge has emerged as the most important factor of production' (Islam, 1999). Possibly, the only option is to develop a partnership with civil society and encourage non-profit investment in educational development of the country. Education in the subcontinent had been private and charitable. Due to poverty and bad management, the country led to the nationalization of education. But it is fact that at least a part of secondary education is private. Lot of students is currently studying in India and the West. A huge amount of private money is spent behind the private education (Khan, 2007).

As it is stated in the website of Bangladesh, education system which assumed that the Government was tempted to consider two things for establishing private universities in the country: one is politics and the other one is expenditure of foreign currency. The inspiration and motivation for establishing private universities came from the severe deterioration of education in the University of Dhaka. In 1993, over 80,000 Bangladeshi students were in Indian colleges, sent there by their parents for getting better education. The total tuition cost for the entire four years is approximately US$ 10,000 in the best private universities in India. This is exorbitant compared to the cost of tuition at public universities. The growth of private universities shows that they clearly met a hidden need.

The private university concept is new in Bangladesh, and it provides also a new avenue for higher education. After the establishment of Buckingham University as the first private university in the United Kingdom, most public universities expanded their sources of revenue, incorporating finances from business and manufacturing industry, and thus achieved a great development. The pioneer universities were the comparatively lesser-known or earlier technical schools that were raised to university status in the 1960s. The list now includes Oxford.

In Bangladesh, the amount that has been earned by public universities in their revenue budget is very minimal, i.e. only 5-12% of own income of public universities add to

the total revenue budget of the respective university. These earnings needed to be increased. Public universities can increase their earnings by utilizing their own and academic resources. In this regard, several reminders have been given to public universities by the Government and the University Grants Commission of Bangladesh (UGC), although it has been informed by the universities that it is not possible to implement or increase earnings of public universities without having any policy-level decision of the Government (University Grants Commission, 2006:28).

It has been observed by Khan (2007) that schools and colleges are profitable enterprises in Bangladesh. But in the case of a university, the collection of tuition fees may not meet even half of the annual budget requirements. Students find it difficult to pay the full cost of higher education. Therefore, expenditure on the university must be considered an investment for the future growth of society, and the fiscal burden shared by the whole community. Both private sponsors and the Government need to be fully aware of the economics of higher education and its impact on total community development. The Government encourages the creation of funds and foundations by granting differential tax relief and concessions. The Government expects promotion of national projects, such as science education, library development, and advances in communication technology. Fortunately, the environment for all these is improving.

According to Hye (2006), now-a-days there are two categories of universities in Bangladesh: one is public and another one is private. The previous ones are few in number and have been established by the Government. These public universities are highly subsidized where students pay a nominal fee and the bulk of the fund needed is provided by the Government. All public universities are autonomous and conduct their affairs under Acts enacted for each university. The Bangladesh University Grants Commission supervises their activities and channels funds for revenue and development expenditure. The UGC plays an important role of a watchdog, ensuring that the autonomy granted to universities is properly used. They also oversee the rules and regulations regarding appointments, promotions of teachers, admission of students, holding of examinations, and conferment of degrees. The UGC has also regulatory and monitoring authority over private universities ensuring that the standard of teaching, libraries, laboratories, and physical facilities is satisfactory.

Demand for Private Education at the Tertiary Level

According to Islam (2006), there was a long-felt demand of the people for opening of private universities in the country. Private universities perform an important role in the growth of education, research, and scholarship along with public universities in developed countries. In our country, the private universities supplement the total

education system. Establishment of private universities came from the limitations and inadequacies of our public education system, which were considered fundamental requirements. Eight public universities located at Dhaka, Chittagong, Rajshahi, and Myrnensingh were the main centres of higher education where hundred thousands of our students appeared for getting enrollment into different departments of these universities. The competition was always very intense, and many students could not get chance in the merit-based admission test. Even today, this competition for placements has not yet reduced in its intensity. One basic reason is that these students can engage themselves in higher studies at these public universities with very nominal tuition fees and get better academic and teaching facilities. The majority of talented students of the country would like to get admitted to study there. However, these public universities can accommodate only 25% of our students. So, the need was felt undoubtedly to create opportunities for higher education for the rest of the majority who want to continue higher studies in some institutions other than public universities.

When the Private Universities Act of 1992 was passed in the Parliament, many educationists, intellectuals, and guardians welcome it as an expansion of our education system at the private level. It created opportunities for many students at the tertiary level, and at the same time it could function to complement the long-established public education system in the country (Islam, 2006).

As it asserted in the website of Bangladesh education system, public higher education is almost free in Bangladesh. On the other hand, higher education at private level is expensive. Until the early 1990s, university education was provided only by public universities (including the highly specialized medical colleges, engineering universities, and polytechnic institutes and colleges). Now-a-days, vocational secondary schools, training centres, and on-the-job training opportunities in the private sector are jumping up to serve the labour market. The fast growing population, urbanization, and income have created a vast demand for good schools at all levels. Usually, parents believe that a good education is the ticket to social and economic success. The need for private tutors is also high. Weak governance has created many opportunities for fraud at all levels in the education sector.

Today, there are 54 private universities of varying quality operating under the Private Universities Act of 1992. The Act requires that at least 5% of the student body receive full tuition waivers. This is made to help poor students by taking advantage of these institutions. (University Grants Commission, 2006: 82).

It is also stated in the website of Bangladesh education system that additional choice of a private university by students from rich families assists to create vacancies in the public universities for other students. Advocates of

private universities have argued that an expansion of private universities would improve access to tertiary education for all students. It appears after 16 years that, although private universities have enhanced choice in higher education for many students, the overall impact on equity and access is mixed.

The better private universities have research centres, modern fully-networked computing facilities, computer-based libraries, well-equipped laboratories, and air-conditioned classrooms. The full-time faculty and administrators are assisted by a large group of visiting faculty who come on vacation leave from universities all over the world. The private universities have a strong bias towards the U.S. higher education system in respect of curriculum, books, and faculty training.

Can be viewed at
http://www.bookrags.com/Education_in_Bangladesh
Visited on 07 January 2007

According to the Wikipedia, a private university is a university that is run with the individual entity. Private universities are common in Japan, the United States, the Philippines, presently in Bangladesh, and many other nations. There is no existance of private universities in some countries. The first public university in the country was established in Dhaka in 1921, then the eastern part of the province of Bengal in British India. Many other

universities were established in Rajshahi, and Chittagong during the Pakistani period (1947-1971). After independence, other universities were also set up.

The UGC serves as the regulatory body of all the public (government-funded) and private universities of Bangladesh. The Private University Act of 1992 paved the way for vigorous sprouting of private universities. Still the country does not have any research and education network (REN).

Benefits of Private Universities

Since the inception of privatization of higher education, it has been assembling force and assumes three possible forms, which are mentioned below (Habib, 2006:8):

1. Increasing dependence on private rather than public resources;
2. Increasing collaboration and mutual understanding with private industry;
3. Enhancing competition among private institutions of higher education in respect to ranking, size, shape, physical facilities, computer labs, science labs, prestige or influence, IT facilities, most importantly library, etc.

Khan (2007) said that it is better to set up private universities in Bangladesh as an alternative strategy of

higher education. A well-managed private university can provide many options of forging global linkages, both for students and institutions, and impart the highest quality education at home. Besides, this can do the following:

a. To share the responsibility with the Government for providing education with a diversified programme that suits market needs;
b. To share the sector cost by generating new resources through non-profit private funding;
c. To save foreign currency;
d. To be more accommodating in designing curricula and syllabi to suit the job market in the country and abroad;
e. To keep away from political turmoil;
f. To provide a channel for the return of expatriate scholars; and
g. To catalyze reforms in public universities.

It is true that the private universities cannot flourish without basic cultural reorientation and the development of a clear understanding among the leadership. The key management of the private university has to understand the differences between a secondary school and a university. The main difference between the two is that while the secondary schools engage in teaching youths for socialization, and on the other hand, the university emphasizes on knowledge building through research and innovation.

Total List of Universities in Bangladesh

List of Public Universities in Bangladesh

1. Bangabandhu Sheikh Mujib Medical University, 2. Bangabandhu Sheikh Mujibur Rahaman Science & Technology University, 3. Bangabandhu Sheikh Mujibur Rahman Agricultural University, 4. Bangladesh Agricultural University, Mymensingh, 5. Bangladesh Open University, 6. Bangladesh Textile University, 7. Bangladesh University of Engineering & Technology, 8. Bangladesh University of Professionals, 9. Barisal University, 10. Begum Rokeya University, 11. Chittagong University of Engineering & Technology, 12. Chittagong Veterinary and Animal Sciences University, 13. Comilla University, 14. Dhaka University, 15. Dhaka University of Engineering & Technology, 16. Hajee Mohammad Danesh Science & Technology University, 17. Islamic University, 18. Jagannath University, 19. Jahangirnagar University, 20. Jatiya Kabi Kazi Nazrul Islam University, 21. Jessore Science & Technology University, 22. Khulna University, 23. Khulna University of Engineering and Technology, 24. Mawlana Bhashani Science & Technology University, 25. National University, 26. Noakhali Science & Technology University, 27. Pabna University of Science and Technology, 28. Patuakhali Science And Technology University, 29. Rajshahi University, 30. Rajshahi University of Engineering & Technology, 31. Shahjalal University of Science & Technology, 32. Sher-e-Bangla

Agricultural University, 33. Sylhet Agricultural University, 34. University of Chittagong. (http://www.ugc.gov.bd/university/?action=public) visited on 12 Dec 2011

List of Private Universities in Bangladesh

1. North South University, 2. University of Science & Technology Chittagong, 3. Independent University, Bangladesh, 4. Central Women's University, 5. Darul Ihsan University, 6. International University of Business Agriculture and Technology, 7. International Islamic University Chittagong, 8. Ahsanullah University of Science and Technology, 9. American International University-Bangladesh, 10. Asian University of Bangladesh, 11. East West University, 12. Queens University, 13. University of Asia Pacific, 14. Gano Bishwabidyalaya, 15. People's University of Bangladesh, 16. Dhaka International University, 17. BRAC University, 18. Manarat International University, 19. Bangladesh University, 20. Leading University, Sylhet, Bangladesh, 21. BGC Trust University, Bangladesh, 22. Sylhet International University, 23. University of Development Alternative (UODA), 24. Premier University, Chittagong, 25. South East University, 26. Stamford University Bangladesh, 27. Daffodil International University, 28. State University of Bangladesh, 29. IBAIS University, 30. City University, 31. America Bangladesh University, 32. Prime University, 33. Northern University, Bangladesh,

34. Southern University Bangladesh, 35. Green University of Bangladesh, 36. Pundra University of Science and Technology, Bogra, 37. World University, 38. Santa Marium University of Creative Technology, 39. Millennium University, 40. Eastern University 41. Bangladesh University of Business and Technology, 42. Metropolitan University, 43. Uttara University, 44. United International University, 45. Victoria University of Bangladesh, 46. University of South Asia, 47. Presidency University, 48. University of Information Technology & Sciences, 49. Prime Asia University, 50. Royal University of Dhaka, 51. University of Liberal Arts Bangladesh, 52. Atish Dipankar University of Science and Technology, 53. Islamic University of Bangladesh, and 54. Comilla University (as per recommendation of the High Powered Committee of the Government, the University is under process for cancellation of registration).

(http://www.ugc.gov.bd/university/?action=private) visited on 12 Dec 2011

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Chapter IV

HISTORICAL GROWTH AND DEVELOPMENT OF MAJOR PUBLIC AND PRIVATE UNIVERSITIES IN BANGLADESH

Introduction

A University is a group of companions of intellectuals, researchers, teachers and students dedicated to learning, teaching, studying and advancement of knowledge. Teaching and research are the major functions of any university. Success of any university depends on the scholastic performances of its teachers and students. The academic performances, intellectual pursuits and the cultural activities of the students and teachers are the crucial topics in a study of the history of a university (Rahim, 1981:IX).

In pre-partition days, less opportunity was created for higher learning programme in Eastern Bengal and the people of that part had poor facilities for higher education. Most of the colleges were situated in Kolkata or in places which were close to Kolkata. There were 13 colleges and 7 professional institutions, such as medical college, engineering college and others. (Rahim, 1981:3)

As stated by Mahmud (2002:132-3), there was no university for a long time throughout the British rule in the area of current Bangladesh. On 1st July 1921, a teaching

cum residential university was established first in Dhaka. The second university was established in 1953 in Rajshahi. On the basis of recommendation of the Shariff Education Commission, two technological universities were established. One in Mymenshing in 1961, called Bangladesh Agricultural University (BAU) and another one is in Dhaka in 1962, called Bangladesh University of Engineering and Technology (BUET). After that two more general universities were established in Chittagong in 1965, and at Savar in Dhaka in 1970, called Chittagong University and Jahangirnagar University respectively. Before liberation, in total, there were six public universities in Bangladesh. After the independence of Bangladesh in 1971, no new Universities were established until 1985.

Higher education has significantly changed during the last thirty-five years. According to UGC (2003:36-7), there was a huge demand of higher education in the country. There was not enough scope of admission of the students intended for higher studies. As a result, there was a rush of students for admission into the universities but the public universities could not accommodate all of them. Therefore, the Government in consulting with the UGC, opened a new avenue for establishment of private universities in Bangladesh. Hence, the Government of Bangladesh approved Private University Act 1992, which was amended in 1998.

Total development pictures of all public and private universities could not be described here due to limitations. However, history and background of major public and private universities in Bangladesh are mentioned below.

Public Universities

University of Dhaka (Estd: 1921)

History

There were several factors considered for establishing the University of Dhaka: first and foremost, the desire of Muslims of Eastern Bengal to motivate the higher learning development of their society; secondly, the desire of the Government of India to set up a new type of residential and teaching university in India; thirdly special emphasis was given to mitigate the overcrowding of the University of Kolkata. "The chief determining factor in the decision of the Government to make the Dhaka the seat of a University", according to the Kolkata University Commission of 1917, was doubtless, the desire to comply with the demand for further facilities for the Muslim population who form a vast majority in Eastern Bengal" (Kolkata University Commission Report, 1917:131-32).

The renowned personalities of the Muslim community led by the Nawabs of Dhaka, Sir Salimullah, Nawab Syed Nawab Ali Chowdhury and Janab A K Fazlul Huq, made a

powerful representation to the British Viceroy Lord Hardinge, in favour of the establishment of a University at Dhaka in January 1912 (UGC, 2003:35).

As per report of the Kolkata University Commission (1917:122-3), the decision of the Government for setting up the University of Dhaka was approved by the Secretary of State. The Government of India invited the Government of Bengal through a letter dated 4th April 1912, to submit a complete scheme along with the budget. The Government of India considered the establishment of a new University in respect of progress of education but the University should be of teaching and residential type. According to the report of the Dhaka University Committee (1914), a decision was made on 27th May 1912 by the Government of Bengal in respect to the proposed University, appointed a Committee of 13 members headed by Mr. R. Nathiel, Bar-at-Law, to make a scheme.

It was recommended by the Nathan Committee that the University of Dhaka should be a state University. In 1913, Nathan Committee report was published and invited views from the public on the scheme for the University of Dhaka. The scheme was given a final shape, which was approved by the Secretary of State in December 1913. On 6th January 1917, Lord Chelmsford, Chancellor of the University of Kolkata, at the Convocation address, announced the Government's policy to appoint a Commission for the University of Kolkata to examine its

problems and to make recommendations about Kolkata University. The scheme of the University of Dhaka was referred to the Kolkata University Commission for their worthy guidance about its constitution and management (Rahim, 1981:6-8, 11).

Kolkata University Commission was constituted. Dr. M. E. Sadler, Vice-chancellor of the University of Leeds, worked as a Chairman of that Commission. The Commission explored different papers, collected written and verbal facts and figures, and received views from the public. The Kolkata University Commission made 13 recommendations regarding establishment of Dhaka University project. These recommendations were accepted, with minor changes, in the Dhaka University Act of 1920 (Rahim, 1981:11, 20).

University of Dhaka Act, 1920

According to Rahim (1981:21-2), the Dhaka University Act, No. XIII of 1920, was passed by the Indian Legislative Council and received the assent of the Governor General on 23rd March, 1920. Its object was "to establish and incorporate a unitary teaching and residential University of Dhaka." The Act provided that it was to come into force on a date that the Governor General-in-Council may order by notification in the Gazettee of India. The introduction of the Act, clause 3(1), declared that 'the first Chancellor and Vice-Chancellor of the University and the first members of the Court, the

Executive Council and the Academic Council and all persons who may hereafter become such officers or members, so long as they continue to hold such office or membership, are hereby constituted a body corporate by the name of the University of Dhaka. Clause 3(2) of the Act declared, "The University shall have perpetual succession and common seal". The Dhaka University Act principally embodied the recommendations of the Kolkata University Commission.

The Act, Clause 4, vested in the University the powers : (1) "to provide for instruction in such branches of learning as it may think fit, and to make provision for research and for the advancement of dissemination of knowledge, (2) to hold examinations and to grant and confer degrees and other academic distinctions to and on persons who (a) shall have pursued a course of study provided by the university, or (b) are teachers in educational institutions, under conditions laid down in the Ordinances and Regulations, and shall have passed the examinations of the University under like conditions, (3) to confer honorary degrees or other distinctions on approved persons in the manner laid down in the Statutes, (4) to grant such diplomas to provide lectures and instruction for persons, not being students of the University as the University may determine, (5) to cooperate with other Universities and authorities in such manner and for such purposes as the University may determine, (6) to institute Professorships, Readerships, Lectureships and posts, (7) to institute and award Fellowships, Scholarships, Exhibitions and Prizes in accordance with the Statutes and

the Regulations, (8) to institute and maintain Halls for the residence of students of the University and to approve and license Hostels maintained by other persons for the residence of such students, (9) to demand and receive such fees as may be prescribed in the Ordinances, (10) to supervise and control the residence and discipline of students of the University, and to make arrangement for promoting their health, and (11) to do such act and things, whether incidental to the powers aforesaid or not, as may be requisite in order to further the objects or the university as a teaching and examining body, and to cultivate and promote arts, science and other branches of learning." Clause 5 of the Act stated, "The University shall be open to all persons of either sex, classes, castes and creeds." According to the Act, the teaching of the University would include lecturing, laboratory work and other teaching conducted in the University by Professors, Readers, Lecturers and other teachers.

Considering the areas of powers and general organisation of administrative arrangements, the University of Dhaka is largely similar to that of the Universities of Manchester, Liverpool and Leeds, although the arrangement is different in some cases. The area of the University of Dhaka was restricted to the city of Dhaka (Rahim, 1981:22).

According to the Act, the Governor General of India was the visitor of the University of Dhaka. The Chancellor, Vice-Chancellor, Treasurer, Provosts, Registrar, Deans

and such other persons declared by the statutes of the University were the chief officers of the University and the Court, the Executive Council, the Academic Council and the Faculties were to constitute its supreme authorities. The Visitor, the Governor General, was given the right to direct an inspection or enquiry into the affairs of the University. The Governor of Bengal was made the Chancellor of the University. As Chancellor he was to be the Head and Chief Officer of the University and the President of the Court.

The Vice-chancellor was made the academic and executive head of the University. He was to be appointed by the Chancellor after consideration of the recommendations of the Executive Council and he would hold office for such terms and subject to such conditions as may be prescribed by the Statutes (Rahim, 1981:23).

Appointment of first Vice-chancellor, Registrar and Treasurer

According to Dhaka University Act of 1920, the Governor General of India selected Mr. P. J. Hartog, C.I.E., who had a notable record as Academic Registrar of the University of London for 17 years and had also worked as member of the Kolkata University Commission, the first Vice-chancellor of the University of Dhaka from December 1, 1920 (Hartog, 1947:87-88). In the first week of December, P. J. Hartog came from the United Kingdom to India and

officially took over the charge of his office on 10 December. In the preliminary arrangements of the University, the first Vice-chancellor had the assistance of H.E. Stapleton, I.E.S., a Special Officer deputed by the Government of Bengal. Mr. Stapleton had played important role as a member of the Advisory Committee constituted under the transitory provisions of the Act. The members of the Advisory Committee, besides the Vice-chancellor, were the Director of Public Instruction (W.W. Hornell), Vice-chancellor of the Kolkata University (Sir Nilratan Sircar and then Sir Ashutosh Mookherjee who succeeded as Vice-chancellor), Nawab Sir Shamsul Huda, President of the Bengal Legislative Council, and the Nawabzada K.M. Afzal Khan Bahadur during the illness of Shamsul Huda. The Governor of Bengal, the Earl of Ronaldshay made the first administrative and teaching appointment on the recommendations of the Advisory Committee. On 12 April 1921, the Registrar of the University was appointed. Khan Bahadur Naziruddin Ahmad, who belonged to the Bengal Civil Service, was the first Registrar of the University of Dhaka. Mr. J. H. Lindsay, I.C.S., was appointed as the first Treasurer (Honorary) of the University of Dhaka (Rahim, 1981:26-7).

University Site

The University inherited the old buildings of the Dhaka College and a greater portion of the Buildings and estate of the Ramna area which had been made for the short-

lived Government of Eastern Bengal and Assam. These lands covered about a square mile in area (six hundred acres), while the buildings included the old Secretariat. Initially, the Library, the Arts classes and residential hall for the Muslim students of the University were housed in that building. The impressive Government House was used for meetings of the Court and other University bodies. In the Ramna Green, the University with about a hundred of its decent buildings of various dimensions enjoyed a very beautiful site. The Vice-chancellor correctly said that the University of Dhaka occupied a site more fabulous than that of any modern University in Great Britain (Rahim, 1981:32).

Opening of the Dhaka University

The University of Dhaka officially inaugurated its doors on 1 July, 1921 with three faculties of Arts, Science and Law and 12 teaching Departments: (1) English, (2) Sanskrit and Bengali, (3) Arabic and Islamic Studies, (4) Persian and Urdu, (5) History, (6) Economics and politics, (7) Philosophy, (8) Mathematics, (9) Physics, (10) Chemistry, (11) Law and (12) Education. The University started functioning with a teaching staff of 60 members. Out of them, 28 were in Arts, 17 in Science and 15 in Law (Rahim, 1981:30). During the launching period, Dhaka University had 877 students, and three residential halls, such as Salimullah Muslim Hall, Jagannath hall, and Shahidullah Hall. (D.U., 2006-07:3).

As per ranking of Webometrics a Spain based organization, Dhaka University was ranked second among all public and private universities of Bangladesh in July 2007.

Current Status

The University of Dhaka (commonly referred to as Dhaka University or just DU) is the oldest university in Bangladesh. It has a wonderful past, an outstanding present and hopefully a brilliant future. It is a multi-disciplinary university and one of the top universities in this region. The University expanded and came to its present shape in three phases. The first one from 1921 to 1947, the second one from 1947 to 1971, and last one has been from 1971 onward. Dhaka University also has more than 200 trust funds. These funds are playing a very active role to promote research, fellowships, scholarships, prizes, and workshops, for advancement of learning in different disciplines. Every year almost five thousand outstanding students of the country enroll themselves in Honours programme in the University of Dhaka. This University is very lucky to have created an exceptional academic standard and reputed itself as an important centre of learning in this region (Rahman, 2003:8-10).

Initially, the University worked hard to make a wonderful record of academic achievement by which the University earned its own reputation. For that the University was

treated as the 'Oxford of the East'. In 1947, it assumed academic authority over all educational institutions above the secondary level falling within East Bengal. In that practice, it became a teaching-cum-affiliating institution. Students and teachers of this university have played a major role to give the country a good shape (Rahman, 2003:8-10).

With more than 26,000 students, about 1,600 teachers, 600 officers and 3,100 staff, the University of Dhaka is the largest public university in Bangladesh. At present, Dhaka University has 07 faculties, 54 departments, 9 institutes, 18 residential halls, and 33 research centres. The ratio of teachers and students is 1:16. On the other hand, the ratio of officers-staff and students is 1:19. Per-head expenditure per year of a student is Tk. 45,965.01. The number of affiliated colleges is 65. In total, 11281 students qualified in bachelor and masters degree examination of different disciplines in 2006 (UGC, 2007:74).

Rajshahi University (Estd: 1953)

History

In 1919, the Sadlar Commission suggested appropriateness of Rajshahi as the site for a university in North Bengal. Rajshahi University was established in 1953, located in a city in northern Bangladesh, called Rajshahi. It stands on the northern bank of the river Padma, four kilometers away from

the city and in a locality of excellent panoramic view called the Motihar green. The University's territorial jurisdiction expands over the Rajshahi and Khulna divisions except Bakerganj and Patuakhali districts. This University is a teaching-cum-affiliating University. The way it has extended during the last 54 years, the University became the second largest general University in our country. Particularly, the University provides for the need of higher education of the northern region of Bangladesh. The university is now run by Rajshahi University act 1973, enacted by the parliament of Bangladesh soon after Bangladesh achieved its independence (UGC, 2007:75).

According to Banglapedia (2003, Vol. 10:266), the first proposal came to set up a university in 1917, when the Kolkata University made the Sadler Commission to assess the need and feasibility for a university in northern and southern Bengal. However, the recommendations of the report did not bring any instant result.

Following the partition of India in 1947, what is now Bangladesh became East Pakistan. Just after partition two universities were established in West Pakistan. Out of two, one is in Peshwar and another one at Hyderabad in Sindh. Civil society people thought that a university was essential for the northern part of the East Pakistan. In 1952, Nurul Amin, Chief Minister and Habibullah Bahar, the Minister for Health of East Pakistan, visited Rajshahi and assured to consider setting up a university at Rajshahi. A Lawyer by

profession, devoted social worker and an enthusiastic educationist, Madar Bux, in the middle of 1952, led a delegation of elites, public leaders, and students to the Chief Minister and successfully ended their mission in convincing him to recognize the need to establish a university in Rajshahi. Then the Government of Nurul Amin introduced the Rajshahi University Bill in the legislative Assembly in November 1952. The Bill became an Act on 31st March 1953 (the East Bengal Act XV of 1953), which is known as Rajshahi University Act. Dr. Itrat Hossain Juberi, one of the most prominent educationists of the sub-continent and the Principal of Rajshahi College was appointed as the first Vice-chancellor of the university on the 6th July 1953. Initially, the university was accommodated to a temporary location. Local circuit house and Bara Kuthi Building were used as the first office and residence cum office of the Vice-chancellor respectively. The University started functioning from 1954-55, sessions and academic activities started in Rajshahi Government College and some other rental buildings with seven departments, i.e. English, Economics, Mathematics, History, Philosophy, Education and Law. These seven departments had 161 students including five female students. The famous Fuller Hostel of Rajshahi Government College was used as the first hostel of the Rajshahi University. Momtazuddin Ahmed, the second Vice-chancellor of the University, who started construction of its permanent establishment in Motihar campus during 1957 to 1965. Later, the University was developed permanently on 732 acres of land at Motihar of Rajshahi city in 1964. In

1964, the offices were moved to its permanent campus (Mostafa, 2004:63-4).

Current Status

Now the University has eight faculties, 47 departments, five institutes, 15 residential halls including four halls for female. The number of students, teachers and employees was about 27900, 1130, and 2631 respectively. Out of the total students, 7577 were female students. The number of resident students is 7269. Tk 37.00 lakh was spent for procurement of chemicals and equipment for laboratory in 2006. The UGC allocated Tk. 78 crore 36.71 lakh for this University during the year 2006. The output of graduates and post-graduates was 7299 in 2006. In spite of political unrest, the University has grown gradually in recent years (UGC, 2007:75-6).

The University performs its functions and responsibilities through the Senate, Academic Council and the Syndicate. The Vice-chancellor acts as the Chief Executive of the University. The University offers teaching courses for both degree and post graduate levels (Mostafa, 2004:64).

Bangladesh Agricultural University (Estd: 1961)

History

Bangladesh Agricultural University (BAU) was established as the only university of its kind in Bangladesh

in 1961 on the basis of the recommendation made by the Commission for National Education and Food and Agriculture Commission in 1959 (BAU, 1999:5).

The Commission also recommended that the Agricultural University for the former eastern part of Pakistan be located at Mymensingh. The alluvial soil of Mymensingh on the Bank of old Brahmaputra is rich with incomparable natural beauty. Different types of cash crops and food crops grow at Mymensingh in plenty. This University has got different features from those of other Universities (Mostafa, 2004:73).

Accordingly, the project for the establishment of East Pakistan Agricultural University (EPAU) was confirmed on 8th June 1961 and its ordinance was circulated on 18th August 1961. After the independence in 1971, it was renamed as Bangladesh Agricultural University (BAU). The University officially came into existence on 2nd September 1961, when the first Vice-chancellor was appointed. The Vice-chancellor started functioning in the same year with only two faculties i.e., the Faculty of Agriculture and the Faculty of Veterinary Science, with 23 teaching departments grouped under two faculties, 30 teachers, and 444 students only. The third Faculty, namely, the Faculty of Animal Husbandry, was included a few months after the establishment of the University. The Faculty of Agricultural Economics and Rural Sociology, the Faculty of Agricultural Engineering and Technology,

and the Faculty of Fisheries, started functioning during the session 1963-64, 1964-65, and 1967-68 respectively. The most important job of this University is to strengthen the quality and standard of higher agricultural education and to produce the first rate agriculturists, agricultural scientists, and technologists for bearing the responsibilities of agricultural development of the country. This is the pioneer and premier University of its kind in the country. Two national research institutes, namely, Bangladesh Institute of Nuclear Agriculture (BINA) and Bangladesh Fisheries Research Institute (BFRI) are housed in this campus (BAU, 1999:5-6).

The University was established by the then Government of East Pakistan with an area of 485 hectors of land in an ideal site with river Brahmaputra almost parallel to the University Campus on the eastern side and rural areas on western and southern sides, 3 km south of the district town of Mymensingh and 120 km north from Dhaka, the capital city of Bangladesh. It is an ideal place for carrying out experiments and research work in Agriculture. The Brahmaputra water washing the eastern boundary of the campus would serve as nature's laboratory for practical training in fisheries. There is a railway station, a post office and a bank in the campus (Rahman, 1987:67).

The University performs its functions and responsibilities through Syndicate, Academic Council, and other statutory bodies, i.e. Finance Committee, Planning and

Development Committee, Faculty Committees, Committee for Advanced Studies and Research, and Boards of Studies. The Vice-chancellor is the chief executive of the University. He is responsible for conducting overall affairs within the outline and policy directives of the Syndicate and the Government (BAU, 1999:6).

The University offers teaching courses at both degree and post-graduate levels under the faculties mentioned earlier. This University confers degree from graduate level to Ph.D. level. The academic programme of the University may be summarized as, namely, teaching - graduate and post-graduate; research – functional and developmental; pre-service and in-services training in extension and organization and methods; refreshers courses - for lower level teachers and for employees of non-teaching organizations; short courses – for public servants at various levels. Agriculture University educated graduates are employed in various capacities such as agricultural administrators, farm managers, agricultural bankers, creditors, and co-operators, teachers, and advanced researchers. Aim of the University is the total well-being of total population who depend entirely on agriculture. The University is determined to bring a new era in the agricultural development of the country. With the establishment of Bangladesh Agricultural Research Council (BARC) a milestone has been developed in the field of agricultural research. Now in collaboration with the BARC, this University is conducting extensive research in the field of agriculture and allied fields (Mostafa, 2004:74).

Current Status

There are six faculties with 43 departments and one institute in the University. The number of students, teachers and employees was 4527, 541 and 2252, respectively. Out of the total students, 1097 were female and 18 foreign students. The University has 11 halls of residence with 4527 resident students. The ratio of teachers and students is 1:8. Tk 67.72 lakh was spent for procurement of chemicals and equipment for laboratory. Tk. 88.89 lakh was spent for the purpose of research. The UGC allocated Tk. 6297.13 lakh for this University during the year 2006. The total classes were held for 266 days and the outputs of graduates and post-graduates was 1326 in 2006. Per-head expenditure per year of a student is Tk. 1,41,351.89. One college was affiliated to the University in the year 2006. (UGC, 2007:76-7).

The academic programme of the University seeks to achieve sustainable capacity in providing high quality agricultural education to excel in the development of agricultural technologies.

Bangladesh University of Engineering and Technology (Estd: 1962)

History

The last quarter of the nineteenth century opened the first chapter in the history of technical education in this part of

the subcontinent. It was in the year 1876, when the nucleus of the Bangladesh University of Engineering and Technology (BUET) of today was first originated with the establishment of a survey school named "Dhaka Survey School". The School was started at Nalgola, in old Dhaka. Basically, this Survey School was established to train the surveyors for the then Government of Bengal of British India. The School started a survey course of two years duration with a view to produce skilled man power and adequately qualified person to serve in Government departments as well as in private organizations. The school slowly gained its reputation and in the session 1895-96, its total number of students rose to about 400. The status of the school was raised in the year 1897 with the addition of a Sub-overseer course of three years duration. A civil Engineering course aiming at qualifying students for employment as Sub-overseers in the public works department, district board, municipalities and private enterprises. The status of the school was further upgraded in the year 1905 with the addition of an Overseer course of four years duration in Civil Engineering for employment of the successful students as Overseer under the above-mentioned employers. At that stage the Nawabs of Dhaka took keen interest in the advancement of Muslim education and His Excellency Nawab Ahsanullah donated a sum of TK. 1.12 lakhs for improvement and development of this institution. In recognition of the generous financial contribution from the then Nawab of Dhaka, it was named after his father Khawja Ahsanullah.

Then, it was renamed as "Ahsanullah School of Engineering" in the year 1908. The Ahsanullah School of Engineering was initially attached to the Dhaka College. The head of this school was known as the Headmaster. Later, the post of Headmaster was upgraded to the rank of Principal and was placed directly under the control of the Director of Public Instruction of Bengal. Mr. Anderson was the first Principal of the institution. In August, 1947 the Ahsanullah School of Engineering was renamed as Ahsanullah Engineering College, Dhaka. Mr. Hakim Ali was appointed the first Principal of the Ahsanullah Engineering College. In February, 1948, the Government of East Pakistan sanctioned and approved the conversion of the Ahsanullah School of Engineering into the Ahsanullah Engineering College, offering both degree courses in Civil, Mechanical, Electrical, Chemical, and Agricultural and Textile Engineering and Diploma courses in Civil, Mechanical, and Electrical Engineering. The college was to accommodate 120 students in the degree level (Rahman, 1987:74-80).

In 1958, on the basis of the recommendation of the Sharif Commission, which was set up by the Government of Pakistan, a University of Engineering and Technology was established in Dhaka in 1962 (UGC, 2003:36).

In 1962, the Ahsanullah Engineering College was upgraded to the status of the East Pakistan University of Engineering and Technology (EPUET) by the ordinance

number XXXVI of 1961 to create facilities for post graduate studies and research in the field of engineering and technology. It was firmly believed that the University aimed at raising the quality of engineering education and providing research facilities would bring an economic prosperity and well being of the nation. After the liberation war of 1971, Bangladesh became independent, and EPUET was renamed to Bangladesh University of Engineering and Technology (Bangladesh Prokoushol Bishshobiddalôe) abbreviated as BUET. This University is now treated as the oldest and leading engineering institution in Bangladesh (Mostafa, 2004:80).

In July 2007, BUET was ranked first among all public and private universities of Bangladesh. This ranking was made by the Webometrics, a Spain based organization.

Current Status

The BUET campus is in the heart of the capital city of Dhaka. It has a compact campus with halls of residence within walking distances of the academic buildings. At present the campus occupies 80 acres of land. This area accommodates all faculties, institutes, departments, the administrative building, the central library, main sports facilities, the auditorium complex, the BUET Club and eighty two units of residential accommodation of teachers, staff and employees and the Vice-chancellor's bungalow (Mostafa, 2004:80).

Currently, the University has three institutes, five faculties, and 16 departments. The number of students, teachers and employees was 8047, 519 and 1150, respectively. Out of the total students, 359 were female students and 18 foreign students. The University had eight Halls of residence with 2825 resident students. The ratio of teachers and students is 1:16. Tk 85.84 lakh was spent for procurement of chemicals and equipment for laboratory. The UGC allocated Tk. 41 crore 36.96 lakh for this University during the year 2006. The total classes were held for 202 days and the output of graduates and post-graduates was 911 in 2006 (UGC, 2007:77).

Jahangirnagar University (Estd: 1970)

History

In 1947, the East Pakistan as an east part of Pakistan had only one University, i.e. the University of Dhaka. It was then a full residential university and the total number of student was 1,620. In a new political atmosphere and keeping a close notice to the hopes and dreams of the people, the residential characteristic of the university was changed and transformed into a strong educational institution of higher education in the province. As a result, the number of students increased to three thousand in a decade. In the meantime, demand from the civil society for higher education was increasing and finally, a second university was established in Rajshahi in the year 1954. It

developed into a higher educational institution for the north and south–western region. Thus, the pressure on Dhaka University was a little bit reduced. But due to the extension of the secondary education a demand again grew up in the society for the expansion of higher education. From severe shortage of educated people in the different segment of the society, the Government gradually established an agricultural and an engineering university in Mymensingh and Dhaka respectively. After the establishment of the two universities, it was felt that the two universities in Dhaka and Rajshahi were not adequate to fulfill the needs of the people all over the country. Therefore, within a short time a third university in Chittagong was set up. This is how from the demand of creating opportunities for continuing higher education, more or less a good number of universities were established. But it was observed that due to various reasons the standard of education gradually had fallen. Though the enquiry commission formed by the Government at different terms, expressed anxiety at this, but could not recommend any effective solution. At last during the preparation of the third five year plan of that time, the Planning Commission for the first time admitted the necessity of taking steps for the improvement of higher education. In the perspective of that statement of the Commission, the need to set up a new residential university came up in the heart of all educated people. A possibility of setting up a full-fledged university as Jahangirnagar University was implied here (Rahman, 1987:100-01).

The Jahangirnagar University was established in 1970, as a unitary teaching and residential University by the Jahangirnagar Muslim University Ordinance 1970. This name was changed to **Jahangirnagar University** in early 1973 by the Bangladesh Ordinance No.1 of 1973. Now the University runs by the Act no. XXXIV of 1973. The University is located at Savar, which is about 30 km from Dhaka, the capital city of Bangladesh. The University has an area of 697.56 acres of land by the side of the Asian Highway (UGC, 2007:78-9).

The proposal for setting up a residential University in East Pakistan, which should be similar to Islamabad University consisting of Institutes of Advance Studies as research oriented centers of excellence and specialization came from the provincial Government. That proposal was approved by the Executive Committee of the National Economic Council of June 1965. Initially, the site was selected for the proposed university at Salna near Joydebpur, which was later on abandoned as that area was developing as an industrial zone. The present site at Savar in Dhaka, an attractive site consisting of meadows, woods and lakes on the Asian Highway, was selected in 1967.

The Project office was located in Dhaka. The project started its work for the establishment of the University in April 1968. The late Dr. Surat Ali Khan, a distinguished educationist, was appointed as Project Director. The original master plan for the proposed university was developed by 'Bastukalaboratoryid' a

renowned architectural firm. The master plan was, however, revised later. The first Vice-chancellor Professor Mofizuddin Ahmed took over the charge of his office on 24th September 1970. Professor Ahmed devoted himself to the job of starting the academic programme of the university (Rahman, 1987:103).

When the University was established in August 1970, the Government approved the 20-year development plan for the University. The main goals of the project were (a) it will be a science-based university, (b) it will be centre of excellence and research, and (c) it will be a fully residential University. At the outset, the University started functioning with four subjects, namely, Economics, Statistics, Geography and Mathematics under two faculties. The first academic session was started in 1970-71 with 150 students and 20 teachers. The University exercises its function and responsibilities through the Syndicate and Academic Council. The Vice-chancellor acts as Chief Executive and Academic Officer of the University. The University offers teaching courses at both degree and post-graduate levels under various faculties, namely, Faculty of Arts and Humanities, Faculty of Mathematics and Physical Sciences, Faculty of Social Sciences, and Faculty of Biological Sciences (Mostafa, 2004:91).

Current Status

There are four faculties, two institutes, and 26 departments. The University has 11 residential halls (six

for males and five for females) with more than 8300 residence students, of which more than 2800 were female. Now it has more than 8700 students, 457 teachers, 204 officers and 1281 supporting staff. Out of total students, 2814 were female. The ratio of teachers and students is 1:20. On the other hand, the ratio of officers-staff and students is 1:6. In 2006, the total budget was allocated Tk. 36 crore 69.47 lacs by the UGC for the university. Per-head expenditure per year of a student is Tk. 45276.35. In total, 1141 students qualified in Bachelor Honours, Masters, and MPhil degree examinations including Ph.D. of different disciplines in 2006 (UGC, 2007:79).

Private Universities

North South University (Estd: 1992)

History

North South University (NSU) is the first and one of the largest private universities in Dhaka, Bangladesh. The University offers undergraduate education in several subjects such as Business Administration, Electrical and Telecommunications Engineering, Computer Science and Engineering, Pharmacy, Architecture, Microbiology, Economics, English and Environmental Studies. It also offers graduate programmes for most of the subjects mentioned above. NSU, the first private university in Bangladesh was set up by the NSU Foundation with the

initiative of a group of philanthropists, industrialists, administrators and academics. The Government of Bangladesh approved the establishment of North South University in 1992 under Private University Act 1992. It was formally inaugurated on 10th February 1993 by Begum Khaleda Zia, former Honorable Prime Minister of Bangladesh. The President of People's Republic of Bangladesh is the Chancellor of NSU. The University has Board of Governors (BoG) is headed by the Chairman elected by its members. The Porichalona Porshod (Syndicate) is the second highest body after the Board of Governors of the NSU Foundation. It manages the University within the policy guidelines provided by BoG. The Porichalona Porshod consists of BoG members, Vice Chancellor, Pro-Vice Chancellor, representatives of the faculty and university administration (NSU, 2006:79).

The Vice Chancellor, as the chief executive officer, administers the university with the help of the different statutory bodies. All statutory bodies function under the provision of the statutes prepared within the framework of Private University Act (PUA) 1992. The Registrar takes care of the university records and keeps liaison with University Grants Commission (UGC), Ministry of Education and other relevant authorities (NSU, 2006:79).

NSU started its first classes in January 1993 with 137 students enrolled in three Departments, i.e. Business Administration, Computer Science and Economics. The

credits obtained at NSU are acceptable to most of the better known universities of USA, Canada, Australia and other countries. A student may transfer a maximum of 60 credits earned at previously attended colleges and universities toward NSU degrees. Transcripts from all previously attended institutions must be submitted (NSU, 2006:80).

The future campus of NSU will be at Bashundhara, Dhaka, where the construction work is progressing gradually on 5.5 acres of land. This campus will have all the modern amenities and facilities of an urban university. The campus will be shifted to its new campus in the near future (NSU, 2006:88).

NSU was ranked fifth among all public and private universities of Bangladesh according to the ranking of Webometrics. Considering other private universities, its position is third.

Current Status

There are three faculties with eight departments and three institutes in the University. The number of students, teachers and employees was 6579, 231, and 240, respectively. Out of the total students, 1916 were female and 27 foreign students. The ratio of teachers and students is 1:28. The ratio of officers-staff and students is 1:27. Tk 85.11 lakh was spent for procurement of chemicals and

equipment for laboratory. Tk. 1 crore 10.16 lakh was spent for the purpose of research. The University spent total Tk. 81 crore 96.80 lakh for the year 2006. The total classes were held for 248 days and the output of graduates and post-graduates was 518 in 2006. Per-head expenditure per year of a student is Tk. 53,775.68 (UGC, 2007:101).

Independent University, Bangladesh (Estd: 1993)

History

According to the annual report of Independent University, Bangladesh (IUB, 2005), this University is managed privately. It has two campuses, one in Dhaka and the other one in Chittagong. Its main campus is at Baridhara, Dhaka. The University consists of 14 independent buildings. It was set up in 1993 and the out reach campus in Chittagong was launched in 1999. A permanent campus is being built at Bashundhara, Dhaka. It has four schools: School of Business (SB)**,** School of Engineering and Computer Science (SECS)**,** School of Environmental Science and Management (SESM), School of Liberal Arts and Science (SLAS). IUB offers a fellowship programme for scholars from home and abroad to do research and study in Bangladesh. In Dhaka, the University works closely with the International Center for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) that has best equipped environmental biological laboratory in the region and the Islamic University of Technology (IUT). The

University has collaboration/link relation with top universities and institutions abroad. In this regard, several agreements have been signed with the universities situated abroad. IUB has a policy to develop its own teaching faculty together with growth of the university. It also has a strong programme of faculty training in order to remain highly qualitative education. Computer center of IUB has online facilities for all students. Online system is connected with fiber-optic network. The University has five units of laboratory: Physics, Chemistry, Biology, Environmental Science and Geographical Information Service (GIS) Laboratory. A senior medical consultant is available on call. Facilities for indoor and outdoor games in the University are available. A good number of clubs are active in organizing extra curricular activities. Counseling Services are offered by the University for building the career of IUB students (IUB, 2005).

Current Status

At present, the University has rented 1,30,000 sq. ft. at Baridhara in Dhaka and 25,000 sq. ft. in Chittagong. Besides, it has 2.64 acre of land at Bashundhara, Dhaka and 7.27 acre of land at Kaliakayr, Dhaka. The University has four faculties and 20 departments. In 2006, it had 2,974 students, out of whom five were foreigners and 1001 were female students. The total number of faculty members was 137, out of whom 38 were female and 60 were Ph.D. degree holders. Besides, 66 faculty members

were adjunct. The ratio of teachers including adjunct and students is 1:15. The number of officers and employees was 72 and 123 respectively. The ratio of employees and students is 1:15. The library contained 24,924 volumes of books and journals. Tk. one crore 78.10 lac was spent for the research purpose and Tk. 96.40 lac spent for procurement of equipment and laboratory item. Total expenses of the University was Tk. 67 crore and 70 lakh. Per head expenditure per year of a student is Tk. 2,24,949.56. Classes were held in 218 days. The output of graduates and post-graduates was 355 in the year 2006 (UGC, 2007:102).

Ahsanullah University of Science and Technology (Estd: 1995)

History

According to the statement made in the web site, the Ahsanullah University of Science and Technology (AUST) was established by the Dhaka Ahsania Mission. The Mission is a non-profit charitable organization in Bangladesh. That Mission was established in 1958 by Khan Bahadur Ahsanullah, a renowned educationist and social reformer of undivided India. He set up this Mission with a vision to make a better society, which is characterized by honest, moral and spiritual values of the highest humanism; and showed in every sphere of life–social, economic, cultural, and access to education and resources. His amazing educational reorganizations

147

include introduction of roll number system in the public examination and establishing equal opportunity for education of all groups of people in the society.

One of the important objectives of the University is to flourish and diffuse need based education for the students of science, technology, business, and social sciences. The University has different types of facilities, such as ten computer laboratories, digital laboratory, three electrical laboratories, electronics laboratory, physics laboratory, chemistry laboratory, environmental engineering laboratory, electrical machine laboratory, microwave laboratory, soil mechanics laboratory, transportation laboratory, control laboratory, communication laboratory, switch gear laboratory, project laboratory, photographic laboratory, textile testing and quality control laboratory, wet processing laboratory and VLSI laboratory. In private sector, this University is playing a leading role in the field of science and technology education in the country. As per Webometrics ranking of July 2007, this University's position is fourth in Bangladesh.
Can be viewed at http://www.aust.edu/about_aust.html

Current Status

The Ahsanullah University of Science and Technology was set up in 1995 at Teztutri Bazar in Dhaka. The University has 92,200 sq. ft. of space. It also has a campus in Rajshahi town having 13,420 sq. ft. of space. The University has one institute, four faculties and seven

departments. The number of students was 2760, out of whom 580 were female. Besides, it has 381 students in Rajshahi campus. The total number of teachers was 334 including outer campus; out of whom 48 female, 54 Ph.D. degree holders, and 128 adjunct faculty members. The ratio of teachers including part-timer and students is 1:10. The number of officers and staff is 21 and 80 respectively. The ratio of officers-staff and students is 1:31. There is one residential hall and the number of resident student is 80. Tk. 63.79 lakh was spent for procurement of chemicals and equipment for laboratories. Tk. 6.62 lakh was spent for research purpose. The total expenditure of the University is Tk. 18 crore 26 lakh during 2006. Per year per-head expenditure of a student is Tk. 31,120.12. The total classes were held for 168 days and the output of graduates and post-graduates was 398 in 2006 (UGC, 2007:104).

American International University-Bangladesh (Estd: 1995)

History

As described in the web of American International University-Bangladesh (AIUB), it is one of the private universities of Bangladesh. It was established in 1994 and located at Kemal Ataturk Avenue, Banani, Dhaka. The Uni-versity has five campuses. AIUB is the member of American Chamber of Commerce in Bangladesh. The

University Grants Commission evaluated and approved the academic program of AIUB on 8th November 1994 and the Government permission was obtained on 6th November 1995.

American International University-Bangladesh (AIUB) is committed to provide quality and excellent computer-based education. The AIUB is dedicated to cultivate and build up outstanding professionals imbued with strong sense of ethical values and competence ready to face the spirited world of business, service and employment. American International University-Bangladesh (AIUB) envisages in promoting and creating a learning environment through state-of-the-art facilities and tools.

The University has three faculties, such as School of Science, School of Engineering and School of Business Administration. There are eight departments under these three faculties. AIUB is the only academic institution in Bangladesh, which maintain its Information Technology by using IBM Application System/400 (AS/400), RS/6000, HP Net Server (LH 3000) and HP Net Server (LH 6000). The University has ten powerful server and six computer laboratories. Each laboratory has forty units of workstations which are connected to gigabyte backbone. Besides, it has three science laboratories and one language laboratory. There are other facilities like auditorium, hostel, international linkages and networking with foreign universities, library, and maintaining institutional

membership with a number of international associations. The medium of instruction for all academic programs at AIUB is English. The university has a provision for transferring students' credits. [Can be viewed at http://www.aiub.edu/]

Current Status

Currently, the University has rented six buildings and operates its activities at Banani, Dhaka. Besides, it has 20 acres of land in Gazipur, Dhaka. In 2006, there were 3,849 students; out of them 12 foreign and 880 female students. The total number of teachers was 169; out of whom 21 female, 25 Ph.D. degree holders, and 12 adjunct faculty members. The number of officers and employees was 54 and 468 respectively. The ratio of teachers including part-timers and students is 1:23. The ratio of officers-staff and students is 1:7. There are four residential halls and the number of resident student is 70, out of whom 50 are female. Tk. 3 crore 43.87 lakh was spent for procurement of chemicals and equipment for laboratories. The total expenditure of the University is Tk. 38 crore 79.06 lakh during 2006. The production of graduates and post-graduates was 595 in 2006. Per-head expenditure per year of a student is Tk. 78,182.37 (UGC, 2007:105).

East West University (Estd: 1996)

History

The idea of setting up a private university to offer quality education at a reasonable cost in Bangladesh was first introduced by a group of prominent academics, business leaders, professionals and education enthusiasts led by Dr. Mohammed Farashuddin. With this vision, this group formed a non-profit, non-political, charitable organization called Progoti Foundation for Education and Development (PFED). East West University (EWU) is its first major project. The Board consists of 15 members governs the University. At present, Mr. Jalaluddin Ahmed is the President of the Board of Directors of East West University. After being accorded permission by the Government under the Private University Act of 1992, East West University was launched in 1996. Classes started in September, 1996 with 6 faculty members and 20 students in the present campus of 45, Mohakhali Commercial Area, Dhaka. East West University makes an effort to synthesize eastern culture and values with western thought and innovations. As an institution of higher learning, it promotes and inculcates ethical standards, values and norms. This University is committed to the moral values of equal opportunity, transparency and non-discrimination. The primary mission of EWU is to provide post-secondary education characterized by academic excellence in a variety of subjects that are

particularly relevant to current needs of the society. EWU is trying hard not only to maintain high quality in both instruction and research, it is also rendering community service through dissemination of information, organization of training programs and other activities (EWU, 2007:5).

According to the annual report of East West University (2007:3), the University consists of five buildings – three 12-storied, one 15-storied, and one six-storied building, with approximate 1,80,000 (one lakh eighty thousand) sq. ft. of space. It has three faculties: faculty of Sciences and Engineering, faculty of Business and Economics, and faculty of Liberal Arts and Social Sciences. Each faculty is headed by a Dean. These three faculties have eight departments, which are headed by respective department Chairpersons. As per act of the university, the Vice Chancellor is the chief executive of the university.

To help and support the students, the University has all sorts of facilities, i.e. seven computer laboratory equipped with more than 260 computers and printers of various ranges, modern language laboratory, state of the art Physics laboratory, VLSI laboratory for CSE/EEE students, Electrical and Electronic Engineering laboratory, telecommunication laboratory, Pharmacy laboratory, Physics laboratory, electrical machine laboratory, network laboratory, control engineering laboratory, state of the art electronics laboratory, medical centre, spacious air-conditioned class rooms, free e-mail and Internet access,

prayer room, cafeteria, separate study rooms other than Library, EWU Centre for Research and Training, Software Development Centre and a modern state of art Library (EWU, 2007:56-9).

It is also mentioned in the annual report of East West University (2007:3), the University has 17 clubs in various fields. These clubs are participating in different competitions at national and international levels, which are also organizing different events in national levels.

East West University, from the beginning, has been providing merit scholarships and need-based financial support to worthy students. In each semester the university distributes at least 9% of its total earnings among 20% or more of its regular students. As per provision of the Private University Act, 1992, private universities must provide scholarships to 5 (five) percent of its enrolled who are poor but meritorious students. The initiators of East West University adopted a policy of not paying any profit or dividend to themselves but to use a good part of its operating surplus towards cultivating merit and providing financial support to those in need. The academic world has welcomed this policy practiced by East West University enthusiastically (EWU, 2007:66-7).

As it mentioned in the annual report of East West University (2007:3), the University has purchased 7.4 bigha lands at Aftabnagar, Rampura, Dhaka, for

establishment of the future campus of EWU. Design has been agreed upon and the construction work of the future campus at Rampura will commence soon. The future campus will have all the modern amenities and facilities of an urban university. The University authority has in mind to move to its own campus by Fall 2009.

Recently, this University was ranked third among all private and public universities of Bangladesh as per ranking of Webometrics, a Spain based organization funded by European Union. Considering all private universities, East West University's position is first in Bangladesh.

Current Status

During the academic year 2006, there were 6162 students; out of them 1519 female students. The total number of teachers was 199, out of whom 28 were female. Among the teachers 29 were Ph.D., and 79 were adjunct faculty members. The number of officers and employees was 76 and 69 respectively. The ratio of teachers and students is 1:31. The ratio of officers-staff and students is 1:43. Tk 62.03 lakh was spent for procurement of chemicals and equipment for laboratory. Tk. 9.37 lakh was spent for the purpose of research. The University spent total Tk. 26 crore 26.03 lakh for the year 2006. The total classes were held for 234 days and the production of graduates and post-graduates was 416 in 2006. Per-head expenditure per year of a student is Tk. 39,928.09 (UGC, 2007:106).

BRAC University (Estd: 2001)

History

Thirty years back BRAC started its humble journey with a number of programmes, such as poverty alleviation, rural health care and non-formal education are important among many other programmes. BRAC works to bring significant changes in socio-economic development for a large number of people, mostly women and children, whose lives are run by extreme poverty, illiteracy, disease and malnutrition. Today, BRAC has grown into one of the largest non-Government development organisations in the world. BRAC constantly monitors its agenda to make sure its effectiveness as a catalyst for change. BRAC admits that development strategies, information technology and effective management can play an important role in modernizing Bangladesh and in securing meaningful jobs for the Bangladeshi employees at home and abroad. Considering the BRAC's continued support to education as a force of change and development, BRAC University (BU) has been established in 2001 to provide a high quality of education to meet the demands of the current age. BRAC University is accredited by the University Grants Commission (UGC) and approved by the Ministry of Education, Government of Bangladesh (BRAC University, 2007:7).

As stated in the annual report of BRAC University (2007:7), that "the mission of the BRAC University is to

promote the national development process through the formation of a centre of excellence in higher education, which is responsive to society's needs, is able to develop productive leaders and actively contributes to learning and creation of knowledge. The goal of the university is to provide an excellent education with a focus on professional development for students, in order to equip them with the knowledge and skill necessary for leading the country in its quest for development".

The Governing Board acts as the supreme policy making body of BRAC University and responsible to make sure the educational standards are set and maintained at BU. The Vice-chancellor (VC) is the Chief Executive Officer and Principal Academic Officer of the University. He is assisted by the Pro-Vice Chancellor. At present, the University has five departments, three schools, one institute, and one centre functioning within the outline of BU. Currently, the University offers undergraduate bachelor degrees in Architecture, Computer Science, Computer Science and Engineering, Economics, English, Management and Business, Physics, and Law; and Masters degree in Business Administration, Development Studies, Public Health, Governance and Development, and Disaster Management. The University also offers Post-graduate Diploma in Bank Management and IT. The University has future programmes, where they will offer a large number of programmes in different disciplines (BRAC University, 2007:17-8).

BRAC University provides lots of facilities, such as all the classrooms are air-conditioned, and equipped with multimedia projectors, have overhead projectors, computers with internet access, television, VCR, teleconferencing system, computer laboratory, digital laboratory, language laboratory, video conferencing centre, IT network, architectural studio, cafeteria, teaching learning centre and a library. Credits transfer system may be considered after admission at BRAC University (BRAC University, 2007:50-1).

Residential Semester

One of the important features of BU is that all students are required to attend a Residential Semester within first year of admission. The first semester will be held in Mohakhali campus and one of the following two semesters will be a residential semester in Savar Campus. The Residential semester aims at increasing the communication skills of the students, especially in English. It also emphasizes, through various exercises and activities, the development of leadership qualities as well as the ability to live and function together as a group (BRAC University, 2007:45).

Current Status

BRAC University has one institute, two faculties, and three schools. The University offers nine undergraduate, five graduate, three diploma, and two certificate courses.

In 2006, the total number of students was 1882. Out of them, female and foreign students were 689 and 13 respectively. The total number of teachers is 221 including 67 female teachers. Out of them; 68 Ph.D. degree holders, three honorary professors, five supernumerary professors, and 99 part-time teachers. Besides, there are 35 teaching assistants. The ratio of teachers and students is 1:9 including part-time teachers. On the other hand, the ratio of officers-staff and students is 1:18. Per-head expenditure per year of a student is Tk. 1,22,552.29. Total classes were held for 246 days. The total number of qualified students were 199 at graduate and masters degree examinations of different disciplines in 2006 (UGC, 2007:108-9).

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Chapter V

HISTORICAL GROWTH AND DEVELOPMENT OF MAJOR PUBLIC AND PRIVATE UNIVERSITY LIBRARIES IN BANGLADESH

Introduction

Library is an integral part of any higher educational institute. All higher educational institutes should have a resourceful library, which provides internet facilities to the teachers, scholars and students along with other facilities of traditional libraries from where users can access latest information of the present world. A good, modern, up to date and IT based well-equipped library with books, periodicals, online journals, and other reading materials in all subjects is essential for advanced study and research purpose. Researchers, faculty members, and students need to know about the information tools and resources available in the library for better use of information. Failure to provide right information at the right time to the right user may lead to faulty results which will, ultimately, hamper national development. In this regard libraries and information centres can play a very crucial and dynamic role in disseminating information.

Public University Libraries

Dhaka University (DU) Library (Estd: 1921)

History

Dhaka University Library is the largest university library of the country. This Library started as a part of the Dhaka University on the 1st of July, 1921. Dhaka University Library began with 18,000 books inherited from the libraries of the former Dhaka College and Dhaka Law College. Mr. F.C. Turner, the former principal of Dhaka College, was appointed in addition to his official duties as the first Librarian of the Dhaka University Library. Mr. Fakhruddin Ahmad succeeded him in the post in 1922. By 1924, the University Library included more 16,000 books in its collection at costs of Rs. 1,50,000.00. Annual grant Rs. 34,000.00 was sanctioned for the Library. A special Committee was formed for the collection of manuscripts of different languages in various subjects. In 1947-48, the collection of the Library stood at 93,355 printed volumes and 2,344 manuscripts. Significant growth was made for the Library in the following years. In 1950-51, the number of collection rose to 1,03,315 printed materials and over 2,500 manuscripts. The collection increased to about 1,50,000 books and 20,000 manuscripts and the Library was housed in a spacious three storied building (Rahim, 1981:130).

In the post-liberation period there had been an important growth in the field of library development. In 1973-74, the

164

University made a sanction of Tk. 2,70,000.00 for the development of the Library. In 1974-75 this amount was increased to Tk. 4,00,000.00. The number of collection stood at 3,43,372 printed books and more than 20,000 manuscripts in Persian, Arabic, Urdu, Sanksrit, Bengali, and Assamese languages. At that time the Library had a subscription of 291 scientific journals. The University gradually increased its annual grant to add more books, journals, and other reading materials for the Library. In 1976-77 the grant was sanctioned to Tk. 22,12,000.00 and in 1977-78 that amount was raised to Tk. 22,36,700.00. In 1980-81 the aforesaid amount was increased to taka 55,55,000.00 for the improvement of the Library. By 1980 the number of books rose to 4,50,000 and manuscripts to 30,000. Besides, the Library developed a collection of 4000 microfilmed copies of rare manuscripts. For study and research purpose, the Library was provided with a grant of Tk. 10,00,000.00 for procuring a number of xerox machines, microfilm frames, for reproduction of rare books, documents, reading materials and other purposes. The University also approved an amount of taka 5,00,000.00 for setting up additional reading room facilities in the Library (Rahim, 1981:130-1).

A very important feature in the development of the Dhaka University Library was the 'Scheme for the collection of research materials for M.Phil. and Ph.D. courses'. That scheme commenced in 1976 and placed to the management committee. The objective of the scheme was

to create research facilities in the University Library by the collection of reading materials from official and private archives inside and outside of the country. Precious acquisitions were made under that scheme. Rare documents and records were collected from local as well as foreign sources. These collections were – family collection of the Dhaka Nawab family, Nawab Sirajul Islam family, Hakim Habibur Rahman family, and Baliadi zaminder family. It also included collection of District Collectorate records and Secretariat records (Rahim, 1981:131).

The India Office Library in London helped a lot in collecting a good number of reading materials. A large collection was procured from this source in different forms. Microfilmed copies of some rare newspapers, such as the Englishman, the Bengalee, the Amrita Bazar, the Dacca News, the Eastern Bengal and Assam Era, plus the Native Vernacular Press Reports from 1868 to 1900 in 45 volumes were procured for the University Library. A good number of Tracts (booklets, leaflets, pamphlets and puthis) have also been procured in micro-filmed copies. Some rare books and documents were collected from the India Office Library in micro-filmed form. Similarly, a good number of collections of Buchanan on Bengal have been acquired from the British Museum. The acquisition of these materials has expanded research facilities in the Library (Rahim, 1981:131-2).

Existing facilities and services

The Dhaka University Library consists of three buildings: the administrative building, the main library building, and the science library building. The three building has a total area of 1,52,000 sq. ft. of which stack area is 67,600 sq. ft., reading area is 47,300 sq. ft., staff area is 27,000 sq. ft. and other area is 10,100 sq. ft. The two buildings are three storied and one is two storied. There is a seat arrangement of reading rooms for 870 students, 50 teachers, and research scholars to study at a time. There are 218 officers and staff engaged with one Librarian (Development and Planning), one Librarian In-charge (Administration), four Deputy Librarians, 12 Assistant Librarians, and one junior Librarian in the Library under the supervision of a Library Advisor (Mostafa, 2004:55).

The administrative offices: a book acquisition section, a book processing section, a reprographic division, a book binding section, a manuscripts division and a seminar section are located in the administrative building. The circulation desk, the reference room, the bound periodicals room, the unbound newspaper reading room, rare books reading room, the Muktijuddho (war of liberation) Cell, the U.N. collections, and the American Studies Corner are housed on the ground floor of the main building. The computing division along with the browsing facilities of the internet and an online catalogue for faculty members and students are also located on the ground floor of the

main building. Current journals are displayed on the Mezzanine floor of the Library. Books on 12 branches of learning, such as Sociology, Statistics, Political Science, Economics, Law, History, Biography, Geography, Journalism, Anthropology, Social Welfare, and Public Administration, are shelved on the first floor, which includes a large size of study room. Books on 11 branches of learning, such as Library and Information Science, Philosophy, Religion, Psychology, Linguistics, Anthropology, Business Administration, English, Bengali, Arabic, Urdu and Persian, are shelved on the second floor, which also includes a spacious study room. Some section has been separated from the main library. The Science Library building consists of a circulation desk, reading rooms, a reprographic section, a reference division, a reading room for current journals, and a seminar section. It also brings together books for the Faculty of Biological Sciences, the Faculty of Pharmacy, and the Faculty of Pure Sciences. In fact, Dhaka University Library is the largest library in Bangladesh. There are separate reading room for teachers, male students, and female students. Research students are given seats in the stock room. It is a treasure house of rare books, manuscripts, and periodicals. At the same time this library also attempts to collect latest books and periodicals published in Bangla and in the English Language (DU Library, 2006).

The Library remains open from Saturday to Wednesday from 8:00 am to 9:00 pm. On Thursday, it is open from

8:00 am to 5:00 pm and is closed on Fridays and other holidays. Scholars from outside the University, with the permission of the University Librarian, can utilize library resources (DU Library, 2006).

A thirteen member Library Committee is formed for efficient and effective management of the Library. There are different sections for smooth operation of the Library. Such as, administrative section of the Library is responsible for general administration, correspondences, personnel management, and maintenance of accounts and files of the Library. Ten staff and officers are engaged to do the job under the supervision of Acting Librarian. Acquisition section is responsible for acquiring all books and non-book reading materials by purchase, gift and exchange. Resource sharing, bill checking and correspondences connected with the procurement of reading materials are done here. Two officers and six staff engaged in doing this job under the supervision of Assistant Librarian. Processing section is engaged with making accession, checking, classifying, cataloguing of books and other reading materials. Dewey Decimal Classification Scheme and AACR2 are used for classification and cataloguing respectively. 22 officers and staff are placed for accomplishing processing job. On the other hand, 11 officers and staff are engaged for making photocopy services available for all users at the rate of 50 paisa per exposure. Manuscript section is very important where 30,000 rare manuscripts are kept and necessary

activities go on uninterrupted to ensure proper management of these valuable manuscripts. Binding section is responsible for binding and preservation of library collection. The seminar section has an issue counter from where a regular student can issue a book for 14 days. Member of teaching staff of the University and research fellows may borrow 10 books and 02 books respectively for a period of 30 days. Besides, the Library provides other services, including circulation, reading room, photocopy, reference, referral and readers' guidance. The current catalogue is maintained in card format and can be approached by author, title and subject. There is also a historical 'sheaf catalogue' for older materials. Internet services to faculty members and research students have already begun in December 1998. This has been specially organized to support the Research and Development activities. Bound and unbound newspapers are preserved in old newspaper section of the Library (Mostafa, 2004:55-62).

At present, the Dhaka University Library has 6,11,884 books, 4,979 journals, and 06 AV materials. In total Tk. 84.00 lacs has been spent for procurement of books, journals, and other reading materials for Dhaka University Library during 2006 (UGC, 2007:74).

Recently, there is a development of forming a consortium in Bangladesh. Bangladesh Academy of Sciences has taken the initiative to form a consortium via INASP-PERI

for getting maximum benefits at minimum cost. Higher educational institutes, research centres and other institues are the members of that consortium. Dhaka University maintains the subscription to Bangladesh INASP-PERI Consortium (BIPC). The patrons of Dhaka University Library have access to many electronic journals through BIPC (BAS, 2007).

Rajshahi University (RU) Library (Estd: I953)

History

According to Mostafa (2004:64-5), Rajshahi University is the second largest University in the country and the highest seat of learning in the northern region. It was founded in 1953. The library was established in 1955 aiming to support the instructional and research program of the University. To provide facilities to students, scholars and faculty members to make full use of the library for developing critical faculty and intellectual curiosity, and above all to keep them abreast with the latest theories, facts, problems, and developments in their respective fields. Initially, the Rajshahi University Library started functioning at "Bara Kuthi" in the heart of the Rajshahi town. After one year the library shifted to the B.B. Hindu Academy. When physics and chemistry departments were opened by the end of 1958, a part of the library was transferred to the campus and accommodated in the physics building. Gradually, more departments were shifted to the campus and to make room for growing

number of books and students. An old historic building, Motihar Kuthi, was used as the branch library from October 1960 to April 1962. Due to scarcity of accommodation, Motihar Kuthi was vacated and part of the library was again shifted to a room in the physics building, whereas the other part of the library was transferred to a tin shed hostel. Therefore, after temporary stay in different places, the library was shifted to its present location in 1964 at Motihar Green that led to an immense development in reading room facilities. Currently the library building has a total floor of 54,500 sq. ft. of which stack area is 19,300 sq. ft., reading area is 25,700 sq. ft., staff working area is 7,300 sq. ft. and other areas are 2,200 sq. ft. It is a very nice building having spacious reading rooms on the first and second floors, each has some specialization on some topics or features. The whole library building is a non-smoking zone. The new three-storey building has a seat arrangement for 750 students, faculty members and research scholars to study at a time. Provision has been made in the Fifth Five Year Plan for construction of an individual library building for science faculties.

Existing facilities and services

The library has 11 sections for operating library smoothly. Library staffs perform their duties manually. But the University Authority has a plan to automate their entire library and for that a pilot project has already been started.

A Library Consultant has also been appointed for the purpose mentioned above. The library was linked with the Bangladesh National Scientific and Library Information Network (BANSLINK), a pilot project of the Ministry of Science and Technology, Government of Bangladesh. However, the project could not continue for long. The project is presently stopped. The library has 97 officers and staff, of whom four Deputy Librarians and three Assistant Librarians are working under the supervision of Library Administrator. The service of the Library include document delivery, current awareness service, various types of bibliographies, literature searches, readers' guidance, preparation of reports for researchers, advice, and problem solving of individual inquiries, and photocopy services, etc. There are two committees for efficient, effective and profitable management of the library. One is working as Library Committee and other one is working as Library Sub-committee. A 12-member Library Committee is the standing committee of the Academic Council of the University. The Library Sub-committee constitutes of 16 members. The Vice Chancellor of the University works as the Chairman and the Librarian acts as the Secretary of the Library Committee. The Committee meets at least one to two times a year. The different sections of the library are located on its ground, first and second floors. From administrative, functional and services point of view the library is organized into 11 sections. There are administration; acquisition; processing; circulation; stack;

rare, reference and documentation; periodical; reading rooms; reprographic; binding and preservation; and computer unit. The library administration coordinates and administers all the activities of different sections of the library. Immediate access to records related to the activities in finance, personnel, circulation, acquisition, serials, cataloguing, reference, and reader services, is necessary for the efficient and effective functioning of the library and preparation of budgets, planning of facilities, reporting and production of different types of statistics for management decision. There are seven officers and staff engaged in this section under the supervision of the library administrator. The acquisition section is responsible to discover what materials exist in the library which might fulfill its objective to select and order those best suited to its purposes that had not yet been procured, to receive shipments, to claim all materials that failed to arrive, to preserve and replace holdings, and to process the materials to the cataloguing section. The processing section looks after cataloguing, classification, subject heading, tracings, maintenance of names and subjects files, maintenance of shelf list files, lettering, shorting, maintenance and filing catalogue cards, typing catalogue cards, typing and inserting book cards, preparation of bibliography, preparation of Union-list of holdings, re-cataloguing, re-classification and miscellaneous. The library has arranged all its reading materials according to 19th edition of Dewey Decimal Classification (DDC) and AACR2. The Library maintains its circulation services through its lending section for

issuing books to teachers, students, fellows, and staff of the University. Handling of overdue, fines, and hold requests are done in the circulation desk. Faculty members are entitled to borrow 15 books for a period of 60 days, students are entitled to borrow two books for a period of 15 days, research fellows are entitled to borrow five books for a period of 30 days, and Syndicate members and staff members are entitled to borrow four books for a period of 30 days from the library. General circulation services, issuance of books, delivery of books, sorting, obtaining books from the counter of the stack, shelving, shelf reading, inventory, spraying insecticides on the books and bookshelves are performed in the stack section. Reference and referral services are provided from the Rare, Reference and Documentation section. Organization and rendering services of periodicals are done from this section. There are five reading rooms in the library. All reading rooms are open on all working days from 8:00 am to 8:00 pm. General stock of books of the library is closed access but the library has open access system in the reading rooms. Users can take out any book from the shelf in any reading room according to their own choice. Rare books, reference books, periodicals, manuscripts, and books valuable for users' illustration are not allowed to issue from the library but they may be consulted in the library under such conditions as the librarian may determine. Reproduction facilities and services are available in reprographic section. Binding and Preservation section is very important for binding and preservation purpose. For providing speedy and quick

bibliographical information services, computer unit plays a vital role to support users. The University has a Seminar Library attached with departments. The Seminar Library's books are the property of Central Library of the University. The University of Rajshahi has six Institutes for higher studies and research leading to M.Phil. and Ph.D. degrees. All institutes have their own libraries (Mostafa, 2004:65-72).

The library remains open from Saturday to Thursday from 8:00 am to 8:00 pm. The library remains closed on Fridays and other holidays. Intellectuals from outside the University can use library resources, but before that they have to take permission of the University Librarian (Mostafa, 2004:65).

At present the Library has a total collection of 324431, of whom the number of bound volume journals is 36534. In 2006, the total number of books 3,397 and 107 titles was collected for the Library. Total taka 46.71 lac was spent for the purchase of books, journals, and other reading materials (UGC, 2007:75).

The University has access to a good number of electronic journals through Bangladesh INASP-PERI Consortium. In short this Consortium has called BIPC. There are some important databases, such as Blackwell-Synergy, Institute of Physics, Springer, Wiley Inter-science, American Chemical Society, American Physical Society, and so on (BAS, 2007).

Bangladesh Agricultural University (BAU) Library (Estd: 1961)

History

The University Library came into existence as East Pakistan Agricultural University Library in 1961, just with the inception of the University itself. Bangladesh Agricultural University Library is governed in accordance with the "Ordinance Prescribing Bangladesh Agricultural University Library Rules" approved by the Syndicate under resolution no. 3, dated 10th October 1963. Formulation of general policies is made by the Syndicate as per recommendation of the Library Committee. The library started with a miniature collection of 5,000 (five thousand) volumes of the then East Pakistan College of Veterinary Science and Animal Husbandry. It was located at the 2nd floor of the old administrative building. The un-spacious room, although it was the largest one of the entire building, where the library was housed in an inexpressibly camped quarter. It could hardly provide with adequate space for managing seating arrangement for 40 readers at a time. The University library moved to its new building in the early part of 1969. The library building was designed by the renowned architect Mr. Richard J. Neutra of the United States of America. It was a two storied fully air conditioned building having a total space of 44,000 square feet, of whom, stack area was 9,200 sq. ft., reading room area was 20,800 sq. ft., staff working area was 6100 sq. ft., and other areas were 7,900 sq. ft. It was completed

at a high cost of a total grant of Tk. 15,32,000.00 (taka fifteen lacs thirty-two thousand). Vertical expansion was completed in 2001 (Mostafa, 2004:74-5).

Existing facilities and services

According to the booklet of Bangladesh Agricultural University Library (2006:1), now the present three storied building has an area space of 66,000 sq. ft. Librarian's chamber and office, procurement, processing, audio-visual, and documentation sections of the library are on the 2nd floor. Reader's service section is on the ground and 1st floor. It is situated at the centre of the University campus.

It has two general stacks having capacity of accommodating 2,00,000 (two lakhs) volumes of books, two general reading rooms having seating capacity of 600 (six hundred) students at a time, one teachers' reading room, 10 (ten) carrels for teachers and research workers, a periodical's room having capacity of accommodating 1,000 (one thousand) current titles of journals and back issues for the same for 20 (twenty) years, one textbook library, one reference library, one audio-visual library, one binding and repairing section, and adequate space for acquisition, processing and office section (Mostafa, 2004:75).

Library facilities are open to all students, teachers, officers, staff and other persons, associated with this university. Outsiders, engaged in education and

178

researches, are allowed to use library facilities on permission. The library is being gradually provided with all modern library facilities.

It remains open from Saturday to Wednesday from 8:00 am to 8:00 pm. On Thursday it keeps open from 8:00 am to 2:00 pm and remains closed on Fridays and holidays. 600 students can sit in two reading rooms and 40 teachers can sit in another reading room. There are 10 carrels in one reading room. The users of BAU Library are teachers, students, researchers, officers and employees of this University. On permission, syndicate members and outsiders are allowed to use the library. The University Library contains many subjects of which agriculture, veterinary science, animal husbandry, agricultural engineering and technology, agricultural economics and rural sociology, fisheries, training and extension are major areas (BAU Library, 2006:2-4).

With a view to cater the information needs of teachers and students as well as extension personnel of the country, the Library has been providing various services such as reference services, CAS, SDI, Inter library loan, CD-ROM search services from various databases. The Library possesses 33 computers, 01 laptop, 10 printers (4 laser, 6 dot matrix), 1 scanner. BAU Library has linkages with NAIS, INRD, DEVINSA, BANSLINK, BERNET, GRMN, CUDOS, AMEDEO, AGORA, SDNBD, DOAJ, and OARE. For processing purpose, the Library follows

AACR-2 and Cutter's three figure table. To make classification number, the Library is using 21st and 22nd edition of Dewey Decimal Classification scheme and 26th edition of Library of Congress Subject Headings. There are 99 staff in the Library of which 18 professionals, 07 semi-professionals, and 74 non-professionals (BAU Library, 2006:3-4).

Now the BAU Library has 1,50,989 books, the total number of copies of journals is 37,298 including bound volumes, and total number of audiovisual materials is 1,639. In 2006, it spent Tk. 31.00 lacs for purchase of books, journals, and other reading materials for BAU Library (UGC, 2007:76).

The Library has computer facilities and started Internet search services with the help of SDNP by establishing a cyber centre. After the SDNP project ended on 31 December 2005, BAU Library is connected to a private Internet service provider for Internet search services. Computer search services from CD-ROM and floppy diskettes are also provided. Audio-visual and documentation services are also offered. Programme has been undertaken to create databases for current holdings. BAU Library was connected to BANSLINK a network organized by BANSDOC, which was not sustainable and another network BERNET, a project of Bangladesh University Grants Commission (UGC) was also not successful. The Library made linkages with CUDOS

(Commonwealth Universities Database Online Services) of ACU (Association of Commonwealth Universities). It has become a member of global research management network of ACU. BAU Library has free online access to AGORA (Access to Global Online Research in Agriculture), where users are able to browse 744 titles with full-text. It also has access to medical journals website AMEDEO and DOAJ (Directory of Online Access Journals) published by Lund University Library (BAU Library, 2006:2-3).

Bangladesh University of Engineering and Technology (BUET) Library (Estd: 1962)

History

The Bangladesh University of Engineering and Technology Library, Dhaka, was established as a school Library attached to the Dhaka Survey School established in the year 1876, within the Curzon Hall Campus. From a simple survey school, the BUET moved towards to its present site in 1906 through crossing a long laborious journey, when the survey school was renamed as Ahsanullah School of Engineering. In November, 1949, the Ahsanullah Engineering School was upgraded to the status of an affiliated Engineering College under the University of Dhaka. Ultimately the college Library again rose to the status of a University Library when the college was upgraded to the University in June, 1962. The East Pakistan University of Engineering and Technology, thus,

has unique development in the sense that it is one of the very few libraries, which has witnessed three stage of growth and development viz. a school library, a college library and ultimately a University Library (Rahman, 1987:84-5).

Bangladesh University of Engineering and Technology (BUET) is the only leading University of Engineering and Technology in Bangladesh for its academic standards and dynamism. It is the only internationally reputed University of Engineering and Technology in Bangladesh. Education, especially at higher level may be described as a process of learning than teaching, signifying the self-efforts education to be put in by the students. Therefore the students in higher education are to be provided with necessary facilities. Classroom instructions alone will not give all the required opportunities to attain the complex educational objectives. It is the library which comes forward to help the students outside of the classrooms. The university library works as a bridge between teachers and students. The Librarian plays an important role to make the bridge in order. If students are intelligent and curious, the library can supplement from its rich resources what the class room fails to supply. BUET dedicates considerable efforts and resources to the development of excellent library collections and services to meet the expanding needs to serve as a national resource reference centre in the field of engineering and technology. Just a few years back the Library introduced information technology in

developing library systems and providing library services faster to the users' community of BUET (Mostafa, 2004:81).

Existing facilities and services

For providing services, the BUET Library has the following departments: viz.

a) Administrative unit;
b) Acquisition and Processing Section;
c) Stack areas and Circulation Section;
d) Reading room and Reference Section;
e) Periodicals, bibliography and non-book materials;
f) Microfilm readers and Photocopying Unit; and
g) Rental library

BUET Library is housed in a 4-storied building of its own having approximately 20,000 sq. ft. floor space. The library has a collection of 1,52,808 items of which 17,839 are bound periodicals and 218 titles are in the current subscription list. It is growing at the rate of 1500 volumes per year. The main collection consisting of books and monograph is housed on the 3rd floor arranged according to the Dewey Decimal Classification number, so that documents on the same or related subjects may remain together. Each of the rows of racks has been posted with an indicative list of subjects of documents in the corresponding row. The central catalogue divided into authors, subjects and titles are also placed on the 3rd floor.

The journal collection consists of current journals arranged alphabetically by title, kept on the first floor and bound journals which are arranged by Dewey Decimal Classification number on the shelves of the same floor. To get access to them, one needs to contact the reference desk for assistance. Abstracts and indexes are shelved alphabetically by title on the shelves of the first floor. The reference collection can only be used within the library. It consists mainly of encyclopaedias, dictionaries, handbooks, world almanac, manual, etc., are housed on the first floor. BUET publications and theses, such as research reports dissertations, project reports, reprints and technical notes are also shelved separately on the first floor. Reserve collection of text books and course material selected by faculty members are kept ''on reserve'' behind the circulation desk. These are lended out for short periods of a few hours to users with special permission from the librarian. Other resources include university catalogue, maps, CDROMs, floppies, tapes and audio-visual material are kept on the first floor. Books having multi-media attachments are kept on the third floor. External users can use the library but they cannot borrow any library materials. The library is open on all days except during declared public and weekly holidays and during the annual break (Islam, 2007).

Books are circulated through three issue counters and two receiving counters. There are two issue counters and one receiving counter for students and one issue counter and

one receiving counter for teachers. There are some rules of issuing cards for borrowing books from this library. The Library can accommodate 345 students at a time to provide reading room facilities of rare, out of print books, ready references and prescribed texts. The Library reading rooms are open for students from 9:00 am to 22:00 pm (Mostafa, 2004:83-4).

In 2006, total taka 93.55 lac was spent for purchase of books, journals, and other reading materials for BUET Library (UGC, 2007:77).

The library services are available mainly to students and teachers, research fellows, officers and other staff of the university including visiting scholars. In addition, professional engineers from outside the university are provided access to the library facilities with special permission. There are 41 staff members in the library including 11 professionals having Master's degree in Library and Information Science from home and abroad and one computer programmer (Islam, 2007).

As described on the web of BUET, the services of the library include inter document delivery, current awareness service, preparation of directories, indexes and abstracts, and bibliographies of various types, user orientation, literature searches, guide and preparation of reports for researchers, advice and problem solving of individual inquiries, providing photocopies, inter-library loan, and

document delivery services. The materials such as microfilms and microfiches, cassettes, journals-bound or single issue, and reference books are not to be borrowed. The ID card and library card are necessary to check out materials from the library. List of BUET publications and theses, list of reference books, list of proceedings, list of manuals, current list of journals, list of bound journal, content pages of current journals are available in the reference desk for providing reference services. A provision is also made for 60 individual studies of researchers, faculty members and post-graduate students. The "Rashid Chair" is named after the name of founder Vice-chancellor of this University is also located in the Library.

Can be viewed at BUET Central Library http://www.buet.ac.bd/library/index.html
The library also provides rental facilities to the students which are unique of its type in the country. It lends all text books of foreign origin to the students at a rent of 10% of the original price for an academic year/term. It procures multiple copies of different textbooks for the purpose of renting out to the students. The multiple copies of books are selected by the heads of the departments and kept in use for at least ten semesters. This helps the students to gain access to all types of text books (Islam, 2007).

According to Islam (2007), in 2000, libraries and information centers are operating in such a setting which

has become more complex than ever before. New technologies have become available as a means to improve library and information services and operations. These technological developments demand modifications and redesigning of the existing library and information system to keep pace with the information explosion that is taking place around the world. With this in mind, BUET has already undertaken a programme of computerization of its library activities and services. The library has developed an oracle based integrated library soft-ware named BUETLIB along with website provision (www.buet.ac.bd/library/) with the cooperation of the Department of Computer Science and Engineering (CSE) in order to timely processing of its information materials, and to provide right information to the right person at the right time which is the main objective of the library and information work. After installation of this software the library has greatly improved in providing library services. There are five modules namely: acquisition, processing, reference, circulation and administration and management integrated into one system. The library currently has two servers and 14 terminal computers for the use of the staff and 42 terminals for the use of the students. These are used for different work in the Library (Islam, 2007).

Prediction of BUET Librarian

In 2007, the Librarian of BUET could predict the changes in the libraries of the country especially in the BUET

library, as an outcome of adoption of automated system. He made the following statement from his long experience, professional education at home and abroad, visiting different foreign professional bodies, educational institutions and research institutes.

1. The users will be electronically scanned as they enter the library. The computer-based scanning system will produce data on how many used the library, when they visited, for what reason, and will prevent theft and will also show who owes what to the library.

2. The books will be automatically shelved by robots that can read information on a book and automatically put it on the right shelf.

3. The electronic system will allow books to be issued to a patron who wants particular books. The system will automatically charge the patron's record and the library will immediately order a replacement copy. Of course, not all books issued, like rare books, etc.

4. The library of the future will have an incredible amount of video and computer material on its shelves, side by side with books which of course will never be superseded.

5. Libraries of the future will be parts of a vast computerized communication system which will enable

one library to borrow from another library instantly and to query a large file of documents immediately. And on the other hand, scientific and technical books, journals, periodicals and other forms of information materials are becoming more and more expensive than ever before.

Jahangirnagar University (JU) Library (Estd: 1970)

History

Just after the promulgation of the Jahangirnagar University Ordinance in 1970, the organization work of the University Library started, although the collection of books for the Library commenced earlier. This great job i.e. the collection for the University Library was run under the supervision of Dr. Surat Ali Khan, then the Director of the University project. About four thousand books and periodicals were collected by that time. Like the administrative offices the library was, primarily, set up at House no. 172, Road no. 13/3, Dhanmondi, Dhaka. Later, in December 1970, the library with other offices was shifted from the Dhaka city to the University campus. A big room, which is very close to the school building near the hall of residence no. 1, was at first fixed for the library. It is needless to say that it was very difficult to run the library work with such a narrow space. However, later, this problem was partially solved with the addition of one tin-shed room, which was used by teachers and students as reading room (Rahman, 1987:91).

Mr. A B M Saifullah, an Assistant Librarian, with other nine employees of different cadres was appointed for operating the library. A Library Sub-committee was formed consisting of one Professor, two Associate Professors and the Assistant Librarian for providing advice to the Authority in connection with library development and later that Committee was approved by the University Authority. On February 1, 1973, Mr. A. F. M. Fazlul Majid, joined as Librarian. In 1978-79 the Library Building Plan of Engineers Associates was given final shape by the middle of the year. Mr. Godfrey Thompson, the British Expert, provided his valuable advice in the modification of the Library plan. The University has now its own new library building having total plinth area of 65,000 sq. ft., of which 40,000 sq. ft. has been built. Of which, 11,000 sq. ft. was allocated for stack area, 17,000 sq. ft. allocated for reading area, 7,500 sq. ft. for staff working area, and 4,500 sq. ft. for other area (Mostafa, 2004:91-2).

At present, the Jahangirnagar University Library has 87,171 books and the total number of copies of journals is 12,398 including bound volumes. In 2006, the library spent Tk. 18.25 lacs for purchase of books, journals, and other reading materials for Jahangirnagar University (UGC, 2007:79).

Jahangirnagar University Library is one of the potential members of Bangladesh INASP-PERI Consortium

(BIPC). Rajshahi University Library and Jahangirnagar University Library are first generation members of BIPC. Jahangirnagar University Library is actively participating in the consortium. The library maintains the subscription to Bangladesh INASP-PERI Consortium (BIPC) for getting access to more than 22 online databases of different publishers (BAS, 2007).

Existing facilities and services

As described on the web of Jahangirnagar University, the Central Library of the University is located in a convenient place between the main academic buildings and the dormitories. Airy with ample glass openings, the library is an elegant piece of modern architecture. The library remains open from 7:30 am to 7:30 pm except on holidays. Teachers, students, researchers, and officers are the patrons of the Library. On request, outsiders are allowed to use the library. There are 52 library personnel of which 18 are professional. The library has been enriched by the donation of the personal library collection of some renowned personalities of the country.

Can be viewed at www.juniv.edu retrieved on 08 July 2007

Circulation, stack area, processing, binding and repairing, rare and Muktijoddah Cell are located on the ground floor of the building. Acquisition, reference, periodical and

reading room, general reading room, are located on the first floor; library office and teacher's carrel are located on the 2nd floor. Library work may be categorized as library administration, acquisition, processing, and circulation. The functions of library administration are planning, organization, administration, supervision, public relations, correspondence, checking at the gate, cleaning lavatories, keep belongings of library users in safe custody, etc. Searching, selection, ordering and receiving of all kinds of library materials are done by acquisition section. For classification and cataloguing purpose, the library is following Dewey Decimal Classification, 19th edition, and Anglo American Cataloguing Rules-2 revised edition respectively. The library has circulation section by which they maintain lending systems. All teachers, students, fellows and staff of the University are allowed to issue and return books. This section has four sub-section, such as lending, stack, reference and periodicals, and reading room. The library has computer facilities used for cataloguing and other different works purpose. One Assistant Librarian is looking after this section (Mostafa, 2004:93-5).

The Library provides photocopy facilities of books and other published materials to meet the research and educational needs of both the students and teachers. Binding subsection is located under the processing section. This section has the principal responsibilities for binding and preservation of library collection. Occasionally book

exhibition is organized in the Library for users of the University (Jahangirnagar University, 2007:226-7).

Private University Libraries

North South University (NSU) Library (Estd: 1992)

History

North South University (NSU) Library grew over the years and now became one of the best university libraries in the country. The library started functioning in 1993, as the University initiated its academic activities. The library is automated using NSU Library Management Software, developed by NSU Library, which supports web-based online circulation system, full-text e-books and online journal article services (NSU news, 2005:1).

Existing facilities and services

The library is located in a 5-storied fully air-conditioned building at Banani, just a two-minute walk from the main campus. The Library has more than 10,400 sq.ft. space, where a total of 19 officers and members of staff run their library in two shifts. It can accommodate over 400 students at a time in its well- furnished reading rooms. On an average 650 users use the library every day. 40 Personal Computers are kept in NSU Library for the use of officers and staff members. For smooth functioning it is

divided into nine different sections, such as acquisition and processing, text book, reference, free reading, journals and magazines, archives, audio-visual and digital archives, cyber center, Chinese corner and faculty study. In order to ensure security of the Library and its resources, a closed circuit camera network operates round the clock inside the library (NSU news, 2005:1,6).

NSU Library maintains 7 days work day of a week. It is open from 8:00 am to 09:30 pm Sunday through Thursday, and from 10:00 am to 09:00 pm on Saturdays. It remains open on Fridays from 10:00 am to 06:00 pm with a Jumma prayer break from 01:00 pm to 02:30 pm. It remains closed on public holidays and other dates announced by the University authorities (NSU news, 2005:6).

NSU Library follows Library of Congress Classification and Dewey Decimal Classification scheme for organizing books, journals and other resources. The collection of NSU Library covers Liberal Arts, Pure Sciences, Social Sciences and Commerce, Particularly Business, Management, Marketing, Finance, Economics, Computer Science and Engineering, Telecommunication, Environmental Studies, English Language and Literature, History and Culture, Psychology, Architecture, Sociology, Pharmacy, Public Health, Biotechnology, Biochemistry, etc (NSU news, 2005:6).

All services of the library are free of cost. Currently, the services available in the library include borrowing and circulation services, reference service, readers' guidance service, internet service, reading room service, news clipping service, CD-ROM database searching, CD writing and downloading and printing services, audio visual service, current awareness service, reprography service etc. The library also arranges orientation program every semester for the new students to demonstrate how to use the university library systems and services (NSU news, 2005:6).

The library has a total of 27,276 books; 4,700 bound journals; and 712 audiovisual materials. Taka 47.10 lakh was spent for purchase of books, journals and other reading materials (UGC, 2007:101).

The library maintains a Cyber Center equipped with 25 computers with broadband Internet connections. All students, faculty members and members of staff of the University can browse, download and print materials from the Websites. CD writing facilities are also available in the Cyber Center (NSU news, 2005:6).

The University allocates around US$ 45,000 every year to subscribe 184 titles of foreign journals including 160 online journals, **IEEE and JSTOR** online digital libraries and packages. In addition, the library subscribes 15 local journals, 18 foreign and 12 local magazines, two foreign

dailies and most of the leading national dailies published from Dhaka, Bangladesh. It also ensures easy access to **HINARI** online database of 4,089 full text online biomedical journals, **OARE** online database of over 1,861 online journals of environmental science and **AGORA** of 1,122 journals. The library subscribes **MyAthens** facilities to support off campus access to online journals. Its online database provides full access to all users, facilitates navigation and reservation of books from distant work-stations through its own website http://library.northsouth.edu. Through this website the registered users of the library may get access to online digital repository (digital library), consist of over 10,000 full text online articles of over 160 subscribed foreign research journals and around 1000 e-books. This online digital repository is developed by NSU Library and the volume of this collection is increasing day by day. The users can also check their borrowing status and can reserve three books at a time for 48 hours through the Internet (NSU news, 2005:6).

Offers Certificate Course in Digital and Online Librarianship

The Library offers a 14-week certificate course titled 'Certificate Course in Digital & Online Librarianship' for those who are interested to know how to use the Internet resources in higher education and research and how to

design and maintain website, and set up online digital libraries (NSU news, 2005:6).

Independent University, Bangladesh (IUB) Library (Estd: 1993)

History

According to the revised draft brochure of Independent University, Bangladesh (IUB) Library, it was established in 1993. Initially, the Library was located in a room of IUB Campus-1 with a collection of 160 volumes of books donated by a founder trust. In 1998, the library was moved from Campus-1 to Campus-5 and known as Central Library. IUB Library System comprises with three libraries in Dhaka Campus and two libraries in Chittagong Campus. Dhaka Campus libraries are the Central Library, Population Library and Environment Management Library. IUB has two libraries in Chittagong campus. A wide range of online and electronic resources have been subscribed to cope with the latest advancement of information. All students have the options to choose their desired books from shelves.

Existing facilities and services

Different Locations of IUB Libraries and timings:

IUB Central Library – House 6, Road 14, Baridhara, Dhaka 1212, Bangladesh; Environment Management Library – House 28, Road 12, Baridhara, Dhaka 1212, Bangladesh; Population Library – House 27, Road 12, Baridhara, Dhaka 1212, Bangladesh; IUB Chittagong Campus Library – 12 Jamal Khan Road (6th floor), Chittagong, Bangladesh; and American Corner, Chittagong – 12 Jamal Khan Road (Ground floor), Chittagong, Bangladesh. The Environment Management Library and the Population Library are running under the supervision of the programme heads. Dhaka and Chittagong Campus Library remain open from Sunday to Wednesday from 8:45 am to 8:20 pm. Libraries remain open on Thursday and Saturday from 8:45 am to 4:50 pm. Population Library is open from Sunday to Thursday from 8:45 am to 4:50 pm. The American Corner Library in Chittagong is kept open from Sunday to Thursday from 12:30 pm to 6:50 pm (IUB Library, 2007).

All reading materials of the library are housed in its four storied hired building at Baridhara. Its subject areas broadly divided into fifteen categories, which are Art, Culture and History, Business, Chemistry and Physics, Computer science, Economics, Engineering, Environment management, Health and Population, Language and Literature, Mathematics and Statistics, Media and Communication, Political science and Public administration, Science – General, Social science – General, and General (not covered anywhere). Separate

collection of reading materials has been built up for Chittagong Campus. Chittagong campus library has more than seven thousand books in its collection (IUB Library, 2007).

As of December 2006, the Central Library's collections are 24,924 books, 146 printed journals, 60,000 electronic journals, and 2,617 audio-visual materials. In 2006, the library spent Tk. 28.80 lacs for purchase of books, journals, and other reading materials for IUB Library (UGC, 2007:102).

IUB Library subscribes to more than one hundred print journals and periodicals, of which 85 international and 23 national titles. In addition to journals and magazines the library also regularly receives twelve national leading Dailys'. Two international dailies, i.e. International Herald Tribune and the Wall Street Journal, are received regularly by the IUB Library. Reprints, pamphlets, annual reports of different organizations, internship reports, project reports of the IUB students are also preserved in the IUB Central Library for future reference and research. There are more than one thousand CD-ROMs, five hundred audio cassettes, and around hundred video cassettes are now available at the IUB Central Library. It also has subscription to a number of electronic databases, such as, **Emerald, JSTOR, EBSCO Host, Blackwell Synergy, American Chemical Society, Springer Link, Science Direct, Oxford University Press and HINARI databases** can be accessed full texts on campus. Off

campus access to these databases is available to faculty and senior students of IUB only. The library web page has necessary links to the databases mentioned above. The webpage also leads to many free electronic resources available on the web. The library contains IEEE transactions in electronic form since 2003 (IUB Library, 2007).

Books are available in two floors (third and fourth floors) of IUB Central Library. The fourth floor contains general books which are ready for loan. Books on third floor are marked with red 'R' to indicate that those are reserved for use within the reference section of the IUB. Reference books and the reserved text books all are marked with the 'R'. Books of environmental management, population and health, and communication are labeled with 'ENV' 'POP' and 'CMN' respectively to keep those together for the convenience of the respective users. Journals and periodicals are kept on the shelves according to their titles alphabetically. Internship reports of the students are organized as per schools, the year of submission, and then accession numbers. Audio cassettes, video cassettes, CD-ROMs, DVD ROMs, etc. are organized on the basis of their accession number and kept on racks. Reprints, pamphlets, reports and other loose or small materials are organized on the basis of subject and kept in the boxes with appropriate labels. These boxes are placed at reference section and arranged alphabetically (IUB Library, 2007).

The Library maintains two computerized databases, of which, one for books and monographs and other one for audio/videos cassettes, CD-ROMS, DVD ROMs, etc. One more database also maintained for the articles published in the local periodicals. Online access to IUB Library can be made through the use of IUB Library website (http://lib.iub.edu.bd).

The IUB Central Library's reading rooms are located on three floors of the library. Over one hundred seventy users can be seated at a time in the reading rooms of the Central Library. Other libraries of IUB have their own reading rooms. Chittagong Campus library has the capacity to accommodate more than hundred readers at its 6th floor premises. American Corner, Chittagong, can have room for additional thirty users. Photocopy services are available in the library for library members. One scanner, one CD writer and one DVD writer are also available in the Central Library for making copy (IUB Library, 2007).

Borrowing facilities are available for IUB Library members. Reference items are not for loan and kept confined for use within the reference section. An undergraduate student can have a loan of three general items at a time and be able to retain those for ten days. Renewal can be done only once successively for an item. Reserved text books can be borrowed for two hours by the members of this category. A graduate student can borrow five items at a time for fifteen days and can renew once.

Reserved text books can be borrowed for two hours by the members of this category also. Lending service to faculty members is flexible. One faculty member can borrow fifteen books for forty five days, which is renewable. IUB ex-students can become member of the IUB Library and borrow only one item for a month. Their benefit also includes reading at the reading rooms, photocopy, computer use and the internet browsing. On campus access to electronic resources is the main attraction of the IUB Alumni library members (IUB Library, 2007).

To keep up-to-date the community of Independent University, Bangladesh, the library maintains news clippings, publishes periodically new arrivals and current contents. News clipping service covers forty areas of interest identified by the users. IUB Library has a unique service in the country and that is indexing the articles of the local periodicals received by IUB Central Library. The IUB Library website has the link to reach this database (IUB Library, 2007).

IUB Library offers an attachment program for the library professionals who want to learn and gain practical experience on different functions, systems and services of the library. Acquisition, processing, circulation and web solution are the important features of different systems (IUB Library, 2007).

American International University-Bangladesh (AIUB) Library (Estd: 1995)

History

American International University-Bangladesh (AIUB) Library is established in 1994. The library is located at a rental house in Banani, Dhaka.

Existing facilities and services

The AIUB Library is built up with a balanced and rich collection in Business Administration, Science and Technology, Computer and Social Sciences. The library is open to students and faculty members of AIUB, which provides rich collection of books including journals, newsletters, dissertations, thesis works and CDs. Borrowing facilities are available for students and faculty members. AIUB Library has its own software called "AIUB Library system". The software has been developed by the University IT department and now the system is functioning, i.e., students are now getting the modern facilities and services from the library. More than 350 students can seat in the library. There are four terminals by which students and faculty members are able to search and locate books that they require. Students' ID cards are treated as library card. The library is operating on an extensive schedule from 09.00 am to 09.00pm.

Can be viewed at AIUB Library
http://www.aiub.edu/HtmlViewer2.aspx?FileName=/staticpages/aiub/resources.htm retrieved on 13th October 2007

At present the library has 27,423 books, 48 journals, and 842 audiovisual materials. The Library spent Tk. 21.55 (taka twenty-one fifty-five) lakh for purchase of books, journals, and audiovisual materials (UGC, 2007:105).

Ahsanullah University of Science and Technology (AUST) Library (Estd: 1995)

History

As it described on the web of the Ahsanullah University of Science and Technology (AUST), the University was established by the Dhaka Ahsania Mission in 1995. The library also started its activities in 1995 with small scale. The library is accommodated in an old hired building. It will be shifted to its own premises very soon.

Existing facilities and services

The University Library is centrally air-conditioned and located in the Annex Building (2nd Floor) of the University. The Central Library of AUST is being gradually developed with latest books, international journals and research papers. The library offers open access to its books and maintains a classified shelf arrangement. The library offers photocopy service.

Students and teachers can make photocopies from valuable journals, research papers, and books.

Can be viewed at http://www.aust.edu/about_aust.html
visited on 21 January 2008

Currently the library has **8,276** volumes of books and 157 journals. The University spent Tk. 7.52 lakh for the purchase of books and journals for the Library during 2006 (UGC, 2007:104).

East West University (EWU) Library (Estd: 1996)

History

[East West University (EWU) Library, established in 1996, is the heart of the university which is growing in number and intellectual capital. Possessing a secure, controlled environment for the protection of the collections and the opportunity to acquire further treasures, the university library offers its users a full range of information and enquiry services with the help of the state-of-the-art techniques and technologies. The library's mission is to enable and enrich the teaching, learning and research endeavours of the University by delivering flexible access to relevant information resources and by providing quality services and facilities. To meet these needs the library provides access to an extensive range of information resources both electronically and in print (EWU library, Fall 2007:8).

The vision of EWU library is to have stronger partnership with the University's teaching and learning community to enable a more direct contribution to the educational mission of the EWU Library. In the last decades East West University library became one of the best private university libraries in the country in terms of its systems, techniques, collections, facilities, and services. From the very beginning, the authority took the policy to invest huge amount in building the library, as they know that a resourceful library can flourish the real university education (EWU library, Fall 2007:8).

To support the mission of the University to emerge as a premier academic university, embracing the traditional values of higher education adapted for the global community in the 21st century; to identify, acquire, organise, store, and provide on-demand access to the available intellectual and research products of scholars to support teaching, learning, research and creative endeavours; to provide greater access to digital collections while continuing to build and improve access to collections in all formats to meet the research and teaching needs of the university; to foster information literacy, working with the EWU community to think critically, creates new knowledge, and be life-long learners; to provide and ensure quality services and good professional practice in library activities (EWU library, Fall 2007:8).

Existing facilities and services

According to the East West University newsletter of summer semester (2007:7), East West University Library holds a unique place among the private university libraries of the country. It provides an array of extraordinary facilities to the library users with the help of state-of-the-art techniques and technologies. EWU Library provides the following facilities for the library users:

a) Three spacious floors house separate circulation and reserve and reference sections
b) Fully air-conditioned floors can accommodate more than 250 students at a time
c) Automated borrowing system
d) Open shelf access system, i.e. the students and teachers have direct access to the bookshelves
e) Faculty members can borrow books for the whole semester
f) Students can borrow CD-ROMs, audiocassettes, text and reference books
g) Provide Current Awareness Service (CAS) and Selective Dissemination of Information (SDI) services
h) Ready reference and referral services
i) Photocopy services
j) News clipping services on important subjects on a regular basis

k) Modern facilities: computers, printers, electric typewriter, etc.
l) Newspaper corner and special collection corner
m) Library users can get the back issues of newspapers up to the last one month

EWU Library is playing a significant role as a supporting section of whole educational process of East West University. Daily, about 2000 users visit EWU Library. Out of them, 300 to 500 users get circulation facilities, 100 to 200 receive photocopy services, 200 to 300 avail journals and newspapers facilities, while other readers use text books, reference books and reference service facilities. Moreover, a good number of users search online journals through our in-house workstations (EWU library, Fall 2007:8).

EWU library is automated in its system and services. Very flexible software, developed by the Software Development Centre (SDC), helps a lot in automating the Library system. Initially they started automation programme with the help of CDS/ISIS. Later on they had migrated data from CDS/ISIS to in-house built library software. To control and support a large number of users, EWU Library has several sections, namely; Circulation, Procurement, Journal and Reference, Processing, Online Resources, Photocopy services, Reserve books services, Pigeon-hole, New Arrivals Dissemination Services, and Library Administration. All the sections of the library are working

together as a team to support the whole university community. Different sections of the library have been created for providing fruitful library services to users' community (EWU library, Fall 2007:8).

Location of the Library: EWU Library is located on 2nd, 3rd, and 4th floor of the Foundation Building of its premises. Besides, New Arrivals display board and Pigeonhole area are located on the ground floor of the same building (EWU library, Fall 2007:8).

Circulation Section: Circulation section is located on the 3rd floor of the Foundation Building. It is a mirror of EWU Library. Lending and borrowing services, users' guidance, reference services, referral services, in-house telephonic response and any query regarding Library services are maintained by Circulation Section. A team, consisting of some young and dynamic library professionals, is working for the Circulation Section (EWU library, Fall 2007:8).

Procurement Section: This section is situated on the 2nd and 3rd floor of the Foundation Building. A good number of reading materials are added day by day with the existing collections to meeting the requirements of academic community. It also fulfills the University's research purpose. An efficient procurement team, consisting of two Assistant Librarians, is responsible for procurement of library materials in the Library (EWU library, Fall 2007:8)

Reserve Section: This section is very important for the students, because a minimum of one copy of all the titles is available here for study purpose. It is a spacious study room, where more than 120 students can sit at a time. The section is situated on the second floor of the Foundation Building. Library's special corner is also located there (EWU library, Fall 2007:9).

Journal and Reference Section: Reference Section is located on the 4th floor of the Foundation Building. This section contains reference materials, namely, encyclopedias, dictionaries, daily newspapers, print journals, periodicals, magazines, maps, newsletters, research reports, and pure reference reading materials. Among them, print journals are very important for the users, particularly, those who carry out their research work in the Library. These journals are being used as primary source of information, which are very important for any researcher. At present, the EWU Library is subscribing, on a regular basis, 140 titles of print journals/ periodicals /magazines for the University. Currently, the library has sixteen daily newspapers, six maps, and two hundred internship reports with other reference materials. One Assistant Library Officer/Library Circulation Officer is entrusted to do this job (EWU library, Fall 2007:8).

Processing Section: Without processing job, no book is readily available on the shelf of the library. To find a book very quickly, processing job is significant for any library.

After receipt of library materials, there are number of jobs to be done in the library, such as, physical check up of books, sealing, cataloguing, classification, data entry, preparing book slips, book pockets, bar coding, pasting and finally shelving. EWU Library performs this job manually and automatically. One Assistant Librarian, assisted by two staff members, is responsible for processing (EWU library, Fall 2007:8).

Organization of Library Materials: According to the Joint Librarian of EWU Library (2007), books are arranged on the shelves subject-wise and are classified according to the Dewey Decimal Classification (DDC) scheme. Sears list of subject headings and Library of Congress subject headings are used to determine subjects. Books are catalogued according to Anglo-American Cataloguing Rules (AACR-2) and entered directly into the Library MIS. Library staff is ready to assist any member in his/her search for desired library materials.

No manual catalogue is available in EWU Library. To find bibliographical information of the resources available in the Library, all users are requested to use the computerised database of EWU Library through Internet using address http://lib.ewubd.edu. Users of the library may take help from the library personnel, if required.

Library Collection: According to the accession register of EWU Library (as of March 2008), Library collection has

grown impressively. At present, the total number of books and CDs are 21,635 and 1,245 respectively in the Library. Collection of EWU Library is comprised of books and periodicals related to the field of Business Studies, Economics, Liberal Arts, Social Sciences, Electrical and Electronic Engineering, Physics, Pharmacy, Computer Science, Mathematics, English Language and Literature, and Bangladesh Studies. the library has also reference publications - such as Atlas, Dictionary, Encyclopaedia, Banglapeadia, Annual Reports and Publications, Survey Reports, Census Reports, Country Reports, Statistical Yearbooks, Year Planning, and some other publications. Important and rare maps are also available for the students in the reference section of the Library.

Types of EWU Library collection are as follows:

Text books, Related reference books, Pure reference books, General books, Journals (print copy), On-line journals, Dissertations, Thesis, Periodicals, Magazines, Newsletters, Reports, Audio-cassettes, CD-ROMs, Maps, Daily newspapers

Books are placed in open stacks for the convenience of use and consultation. EWU Library maintains open access shelves to give enough choices to users so that users can select their desired library materials. Library personnel are ready to assist in locating information, answer on-the-spot queries, guide and provide instruction in the use of the

catalogue, databases, resources, indexes, and abstracts whenever needed. Users can read books, journals, periodicals, newsletters, newspapers, etc. inside the library and are allowed to pull books from shelves for reading and borrowing purposes.

Online Resources Section: EWU Library is not confined only to collect traditional books and journals. It is one of the best online resource centers among private universities in Bangladesh. It subscribes world's leading online Journals; i.e., **JSTOR** (Journal Storage), **IEEE** (The Institute of Electrical and Electronics Engineers, facilities available only for individual faculty member) and **ACM** (Association for Computing Machinery, facilities available only for individual faculty member). Besides, the Library is getting free access to **HINARI** (Health Inter Network Access to Research Initiative), **AGORA** (Access to Global Online Research in Agriculture), **OUP** (Oxford University Press), and Highwire Press (Stanford University's free online journals site) journals. All users can find many electronic journals and access full-text articles of the above-mentioned databases. To get the URL of the above-mentioned databases, please contact Library (EWU library, Fall 2007:8).

Corporate Membership: EWU Library is a corporate member of the British Council, Dhaka and American Information Centre (Archer K. Blood American Centre Library), Dhaka. Membership facilities like browsing,

online public access catalogue, photocopy services, Internet access and access to online journals are available in the respective premises.

Consortium: East West University is subscribing to the 'Bangladesh INASP-PERI Consortium (BIPC)' http://www.inasp.info, http://peri.inasp.info/peri/peri.pl for getting access to full-text articles/abstracts/ bibliographical information of online journals of different publishers on different disciplines through the Bangladesh Academy of Sciences (BAS). Access to online journals is IP based. All users of EWU will be able to get access to these on-line journals from the LAN (local area network) of EWU (EWU library, Fall 2007:8).

Photocopy Services: The EWU Library has a Photocopy Corner located at the entrance on the 2nd floor of the Foundation Building. Photocopy Corner is open from 8.30 am to 5.00 pm with half-an-hour (from 1.30pm to 2.00 pm) break for lunch. After 5.00 pm and on Fridays photocopy is available from Photocopy Centre of the University located at Research Building. Library Photocopy Corner is closed on Fridays and Saturdays (EWU library, Fall 2007:9).

Pigeon-hole Area: Pigeon-hole support services are available on the ground floor of the Foundation Building, where the more than 400 students may keep their personal belongings at a time (EWU library, Fall 2007:9).

New Arrivals Display Area: One New Arrival display board is also located on the ground floor of the Foundation Building. All the users may find the book jackets or title pages of new books, which arrive recently, in the Library board (EWU library, Fall 2007:9).

EWU Library Launched Web Based Services: From Fall semester 2007, EWU library introduced web based library services. Henceforth, users can search our library resources from home. Moreover, borrowing status, library books' status, online journals' icon, and user's guide, are also available on the web. Users' are requested to search at http://www.ewubd.edu/ of EWU Library (EWU library, Fall 2007:9).

Library Committee: According to the file of EWU Library, the Library is advised by a committee comprised of representatives from different faculties and departments of the University. The Pro-vice Chancellor of East West University acts as the Chairperson of the Library Committee. On the other hand the Joint Librarian of EWU Library acts as the Member-Secretary of the Committee. Responsibilities of the Committee are to advise the Library personnel of EWU Library in formulating library policies, procuring library materials, improving library and information services, operational matters, and so on.

Library Personnel: According to the file of EWU Library, to meet the growing demand of users, professionally

trained personnel are responsible for taking care of EWU Library and its contents, including the selection, processing, and organization of materials and the delivery of information, instructions, and loan services to meet the needs of its users. A good number of staff members, of whom, most of them having masters degree in Information Science and Library Management from the University of Dhaka are running the library in two shifts.

Library Timing: EWU Library remains open from Sunday to Thursday from 08:30 am to 10:00 pm without any break. On Fridays Library also remains open on 08:30 am to 05:30 pm with a break from 01:00 pm to 03:00 pm for Jummah prayer and lunch. The library is closed on Saturdays, Government holidays and as announced by the University Authority.

BRAC University (BU) Library (Estd: 2001)

History

According to the file of BRAC University (2007), Ayesha Abed Library (AAL) of BRAC University provides a variety of services designed to support the students, faculty members, researchers, staff members of BRAC and BRAC University and outside users. Initially this library was housed in BRAC Centre before 2001. The library was shifted to the Aarong House, while the University was established in 2001. At the outset, the

Ayesha Abed Library was built up with the previous collection of BRAC Centre Library. The Ayesha Abed Library started functioning since 2001 with full academic atmosphere. At present the library occupies 9,000 sft on two floors of the main BRAC University building located at Aarong House.

This library is committed to the mission of BRAC University: to foster the national development process through the creation of centre of excellence in higher education that is responsive to society's need, is able to develop creative leaders, and actively contributes to learning and creation of knowledge (BRAC University, 2007).

Existing facilities and services

All categories of members of the Library may examine, consult, borrow, and browse books, journals, and other printed and non-print resources/materials. There are six types of library members are maintained in AAL. All may receive other services of the library. Flexible library rules are set for all users. A 3rd floor reading room shelves all cataloged books, journals, research papers, and multimedia. A searchable online public access catalog (OPAC) is available on the Library website. The 2nd floor Cyber Library contains 50 computers with e-mail and Internet facilities for study and printing, general study areas, silent study rooms, and a discussion area. The library provides services with the e-

resources, like J-STOR, DOAJ, HIANRI, Agora, EOLSS, OUP, Intranet e-Granary Digital Library (2.5 million e-documents), etc. User services include book circulation, reserve, reference assistance, photocopy and interlibrary loans. A team of professional staff members including IT personnel serve the reference/circulation desk, perform searches, order resources, catalog items, give referral and bibliographic services, digital library services and provide training on use of e-resources. All personal books, coats, jackets, bags, briefcases, umbrellas, and other personal belongings are to be kept in the pigeonhole near the security desk (BRAC University, 2007).

Ayesha Abed Library remains open from 09:00 am to 09:00 pm from Sunday to Thursday and from 10:00 am to 6:00 pm on Saturdays. The library is closed on Fridays and other holidays as declared by the University (BRAC University, 2007).

At present the Library has 15,579 books, 130 journals, and 250 audiovisual materials. The University spent Tk. 32.46 lakh for research purpose in 2006 (UGC, 2007:108).

The library is run under the guidance of Library Committee (LC) with the representatives from different Departments of the University and from BRAC Head Office. The Committee is to advise the Librarian of BRAC University Library (AAL) in formulation of library policies, procurement of library resources materials,

improvement of library and information services, and operational matters. The Librarian is the chief executive of the library and is responsible for implementing the policies, rules and day-to-day administration.

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Chapter VI

STATUS OF IT APPLICATION IN PUBLIC AND PRIVATE UNIVERSITY LIBRARIES IN BANGLADESH: AN OVERVIEW

'Library is a growing organization' a core statement made by S. R. Ranganathan is more accurate than what it means. According to Khan (2006:2), the library is the source of information and power of knowledge. The library could be considered also as the knowledge base. The library has particular functions and responsibilities to facilitate the widespread use of learning materials by students, teachers, and researchers in higher learning institute. Large number of literature is growing in such a manner, these groups of library users have faced difficulties in identifying the appropriate literature for their use and consultation in a desired timeframe. Since the ancient time thousands of changes and developments have been making library wider day by day in each sphere of knowledge dissemination world.

During the last two decades, information and communications technology (ICT) has significantly contributed to open the door to the hidden knowledge in a very efficient manner. In the beginning, the ICT was used in developing databases of information resources in the library. The purpose of developing database is to store, retrieve, and organize information

on different types of publication resources. The ICT has placed us in the electronic environment to help identify, assess, acquire, record, store, organize, and disseminate information and information resources as per the need of specific requirements of an organization or an individual. The application of information technology in libraries has enhanced efficiency and effectiveness in all aspects of information acquisition, storage, transfer, and dissemination. In keeping pace with the new technologies, the traditional libraries have been modernized to make these as well-equipped and inter-connected with electronic library (Khan, 2006:2).

Libraries have been providing various types of services for their users' communities since ancient period. Today the nature of services, degree of users' demand, and level of satisfaction of library users, has changed. Several amazing inventions in the field of science and technology have forced libraries to develop new services. Libraries have also made some radical changes in their services using Information Communication and Technologies (ICT). They are providing traditional library services as well as new services developed using ICT according to users' demand.

Libraries have successfully adopted ICT to design new services and to transform the traditional library

services into a newer one. Libraries are still providing reference services, indexing and abstracting services, reading services, and lending services. Using ICT and advanced technologies, the above-mentioned services, libraries are also providing new types of services which are the ultimate facilities brought out by ICT. The advanced technologies offer some new types of services like automation of libraries, web portals, full text journals' articles searching, document delivery services, consortia, information sources freely available on the internet, and prompt communication made with the vendors through email and e-fax. With the advanced development of information technologies, university libraries are in a position to provide a variety of services over a wide range of area, which were not possible previously, but now possible for invention of new technology. IT-based library services mean computer based library services or the services are provided with the help of computer, Internet, email, etc. These services are given below.

Library automation is one of the important aspects of IT-based library services, which includes web-based integrated library software and other important IT features. IT-based services may contain the followings:

Acquisition includes ordering, receiving and payment of books; **processing** consist of classification, cataloguing, data entered into library database,

management of bibliographical information of reading materials, control of serial holdings, preparation of library tools; **searching** facilities from **library database, online and off line (CD-ROMs) searching** facilities, searching of **e-journals** through **consortium**; online public access catalogue **(OPAC)** search; **circulation** covers loan services, creating library membership cards, fine generation, blockade system for renewal of library membership cards, borrowers' status, reading materials' status, report generation, online reservation; **information retrieval** from library database; **computer** facilities, such as **CD and DVD writing** services, **Internet** services**, Pen drive** port facilities and services, **Network** printing facilities and services, **Document delivery system through email, email** checking, **Colour printing** facilities and services, **Scanning** facilities and services; **telecommunication facilities with services** covers **land-based phone and cell phone** services, **Fax** services, **Wi-Fi** system, **Wi-Max** system, **CCTV** Monitoring system and services; **technical** services i.e. security system of library services with **RFID technology**, stock verification, and photographic reproduction services; **television** facilities; **e-alert** services; **video** conferencing; **readers'** services covers new arrivals i.e. current awareness service **(CAS)**, Selective Dissemination of Information services **(SDI)**, **bibliographic and abstracting** services, **e-counseling** services, **electronic dissemination** of books' image,

226

reference and inter-library loan services, **document delivery** services, **literature search** services, **virtual library** services, 'Ask a Librarian' **FAQ (frequently asked questions)** services, new **e-books** services; **administrative** services **(e-governance); list server** facilities and services; **news clipping** services; **adaptable technology** services for the **disabled persons**; **web based** library services; building of **electronic archives; institutional repository (IR)** services; **digital library** initiatives; and **report generation of different library activities**.

An overview of the above-mentioned library services is given here for measuring the performance of public and private university libraries surveyed. To prepare an overview, the following tables were made for getting the existing status of IT-based (computer oriented) library services of university libraries surveyed. Through this overview, we would be able to give a clear picture of existing IT-based library services provided by the said universities.

Table 6: Existing Status of IT-based Library Services of Universities

Universities / Services		NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Automation	Name of library software	NSU-LMS	Locally developed	EWULIB-MIS	BU-LMS	BOOK TRAXX	Not Yet Developed (under process)	GLAS	BUET-LIB	WIN ISIS	Not Yet Developed
Acquisition	Ordering	–	√	–	–	–	–	–	–	–	–
	Receiving	–	√	–	–	–	–	–	–	–	–
	Payment	–	–	–	–	–	–	–	–	–	–
Processing	Classification	√	–		–	√	–	–	√	–	–
	Cataloguing	√	√	√	–	√	–	√	√	√	–
	Data Entry	√	√	√	√	√	under process	√	√	√	√ partly
	Preparation of library tools	√	√	√	–	√	under process	√	√	√	√ partly
Searching facilities	Online searching	√	√	√	√	√	under process	√	√	√	√
	Library database Searching	√	√	√	√	√	under process	√	√	√	–
	Off-line (CD-ROMs)	√	√	√	√	√	under process	–	√	√	√
	E-journals through consortium	√	√	√	√	–	√	√	√	√	–
	OPAC (Online Public Access Catalogue)	√	√	√	√	–	–	√	√		–

Available √   Not Available -

The above-mentioned table shows us four major features of IT-based library services, which are described below.

228

Library automation

Automation is a use of computer-assisted systems to undertake repetitive jobs leaving staff free to accomplish other duties (Harrod, 1995:48). All the university libraries surveyed have automated a good number of work and services of the respective university except AUST and BAU. AUST recently moved to its own campus located at Tejgaon, Dhaka. These two (AUST and BAU) libraries are under going the process to automate their library. Book processing and circulation services are very important jobs of automation, these two jobs are maintained by all university libraries surveyed except the above-mentioned two. With the help of in-house computer science department of the respective university, **library software** is used by all private university libraries surveyed. In private sector, different libraries maintained different systems. In one part, IUB Library maintained CDS/ISIS software for the processing of reading materials and on the other part they used home made library software for circulation and finally these two parts were linked with the help of an IT expert. But all these software are **indigenous and not recognized internationally**, although a few of them are web-based. Library activities; particularly processing, circulation, and reference services; function well with the help of these locally made softwares.

In the public sector, DU Library purchased **GLAS** library software for automation purpose. DU Library was partly

automated as they processed their reading materials through automation, a good number of reading materials is still unprocessed. GLAS itself had some sort of limitations in terms of containing records in the database. But the software has the provision for containing a large number of records.

JU Library maintained **CDS/ISIS and WinISIS** both version for automation purpose. Data of some reading materials were entered into the database using CDS/ISIS version and a few number of reading materials were entered into the database using WinISIS version. Automation programme was not run properly for the unwillingness of staff to work with IT facilities except a few in the library and lack of professional librarian in the university. There is no professional librarian for a long time. It is observed that the Management of the university has not taken any initiative to develop library with all IT facilities and make the library a modern one.

BAU has not yet started any full-fledged automation programme for their library. They have partly started and made a database using CDS/ISIS software for thesis and dissertations. Holding of journals was maintained by MS Word programme. They do have the programme in their hand for full automation of the library.

BUET Library has also developed its library software with the help of Computer Science Department to automate

their library. The name of the software was BUETLIB. They have maintained library database using **BUETLIB** software. Data of more than one hundred thousand books were entered into library database. Mainly, five modules were made for BUETLIB software, i.e. acquisition, processing, circulation, reference and readers' services. Out of five modules; processing, circulation modules, reference, and readers' modules are active, but acquisition module has not yet been made active.

Acquisition

Acquisition is a process of obtaining books or other reading materials for the library. It is basically involved with **identification and selection** of reading materials, **issuance** of order, **receiving** of books as per order and **payment** of the same in favour of the respective vendor. Till now, there is no library of any university surveyed in Bangladesh developed any online acquisition system by which all other relevant library services can be linked by the use of library software. The total acquisition system of university libraries is mostly done manually. No university libraries surveyed are yet to develop any separate module of acquisition system for integrated and customized library software except IUB. But it has been observed that NSU and EWU libraries maintained a little part of their acquisition system by using library software. JU Library also could do acquisition by Win/ISIS software but the Library staffs are not able to implement the system.

Processing

Processing comprises sealing; making accession; classification; cataloguing; data entry; determining subject headings; management of bibliographical information of reading materials; control of serial holdings; pasting date due slip, book card and book pocket; and preparation of library tools. All the libraries surveyed processed their reading materials using manual and technological system both. **Computer based classification system** was used by NSU, AIUB, and BUET library. DU Library has the provision of computer based classification system but they are not using it. **Computer based cataloguing system** was maintained by NSU, IUB, EWU, AIUB, BUET, DU and JU, except BU, AUST, and BAU. Data entries are given by all libraries surveyed except AUST and BAU. **Computer based library tools** (catalogue card and bibliography are generated by computer) are available at all libraries surveyed except BU, AUST, and BAU. All the libraries surveyed use standard cataloguing code for processing job. AUST, DU, BUET, JU, and BAU libraries use card catalogue and on the other hand NSU, IUB, EWU, DU, and BUET libraries use automated card catalogue. DU and BUET libraries use both the systems. **Searching facilities (online and offline services)**

Online searching means whereby a searcher at a remote terminal can access and interrogate databases containing bibliographical or other data. Such databases, produced by

232

commercial firms, governments department, professional bodies, research organizations, etc. are usually made available via a host (Harrod, 1995: 465). **Offline searching** means information is not available through online search. All types of searches could be tenant done through on-line and off-line facilities in the libraries surveyed excluding AUST library. Facilities for browsing and searching of CD-ROMs of books, journals, encyclopedia, etc. using micro-computers were available in all libraries surveyed excluding AUST. NSU, IUB, EWU and BU, which maintained a good number of computers dedicated for online journals searching. On the other hand, a small number of computers were used for the purpose of online journals searching by AIUB, DU, BUET and JU libraries. BAU and AUST libraries do not provide any facilities to users for online journals searching purpose.

Searching facilities contain **on-line, database searching, off-line, consortium, and Online Public Access Catalogue (OPAC) services.** As desired by users, searching facilities and services were available to the users of NSU, IUB, EWU, BU, AIUB, DU, JU, BAU and BUET libraries. Online searching, database searching, and off-line (CD-ROMs) searching facilities were available in all the libraries surveyed except AUST Library. For some reason DU Library does not allow any student to use CD-ROM search facilities. All users of private university libraries can get access to the library database of respective university excluding AUST and BAU.

Consortium is a resource sharing organizations formed by libraries. We can also term consortium as co-operatives, networks, collectives, alliances, or partnerships (Harrod, 1995:161). 'Minimum cost and maximum services' is the motto of consortium. At present, there is a consortium named Bangladesh INASP-PERI Consortium (BIPC). The Consortium is coordinated by Bangladesh Academy of Sciences (BAS). Libraries of NSU, IUB, EWU, BU, AUST, DU, BUET, and JU are the members of BIPC excluding AIUB, and BAU. The members of consortium use facilities and online journals' services of BIPC. Currently there are more than 22 databases are being maintained in the consortium.

Online Public Access Catalogue means **OPAC** and an automated catalogue system. The catalogue is stored in machine-readable form and accessed online, generally via a networked terminal (Harrod, 1995:465). OPAC is one of the important tools for searching books from library. If OPAC is available in university libraries, users may have an opportunity to search books through on-line. The book can be found from the desktop of office, from home or from any where, if they have Internet connection. NSU, IUB, EWU, BU, DU and BUET libraries has OPAC facilities, so users of these universities can use OPAC services through online. AIUB, JU, BAU and AUST libraries do not have OPAC facilities.

Table 7: Existing Status of IT-based Library Services of Universities

Universities		NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Services											
Circulation	Loan services	√	√	√	√	√	–	√	–	–	–
	Library membership cards	√	√	√	√	√	–	√	√	–	–
	Fine generation	√	√	√	√	√	–	√	√	–	–
	Blockade system for renewal	√	√	√	–	√	–	√	√	–	–
	Borrowers' status	√	√	√	√	√	–	√	√	–	–
	Reading materials' status	√	√	√	√	√	–	√	√	–	–
	Report generation	√	√	√	√	√	–	√	√	–	–
	Online reservation	√	–	√	–	√	–	√	√	–	–
Information retrieval		√	√	√	√	√	–	√	√	√	√
Computer facilities with services	CD & DVD writing services	√	√	√	√	√	–	–	√	√	√
	Internet services	√	√	√	√	√	–	√	√	√	√
	Pen drive port facilities and services	√	√	√	√	√	–	√	√	√	√
	Network printing facilities and services	√	√	√	√	√	–	√	√	√	√
	Document delivery system through e-mail	√	√	√	√	√	–	√	–	√	–
	E-mail	√	√	√	√	√	–	√	√	√	√
	Color printing	–	–	–	√	–	–	–	–	√	–
	Scanning	√	√	√	√	√	–	–	–	–	√
Tele-communication facilities with services	Land based phone	√	√	√	√	√	√	√	√	√	√
	Cell phone	√	–	–	–	–	–	–	–	–	√

Universities Services	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Fax services	–	–	–	–	–	–	–	–	–	–
Wi-Fi system	–	–	–	–	–	–	–	–	–	–
Wi-Max system	–	–	–	–	–	–	–	–	–	–
CCTV Monitoring system and services	√	√	–	–	√	–	–	–	–	–

Available ✓   Not Available -

The above-mentioned table includes IT-based library services; such as circulation, information retrieval, computer facilities with services, and telecommunication facilities with services. These services are offered by the libraries surveyed.

Circulation

Circulation module contains loan services, creating library membership cards, fine generation, blockade system for renewal of library membership cards, borrowers' status, reading materials' status, report generation of circulation activities, and online reservation, etc. Reading materials **loan services** are provided through IT-based operating system by all private university libraries surveyed except AUST, BUET, JU and BAU Library. **Library membership cards and auto-fine** are generated through computers by all libraries surveyed excluded AUST, JU and BAU. There is a

236

provision of **blockade system** for renewal of library cards, which is done by library software. This blockade system is available at NSU, IUB, EWU, AIUB, DU, and BUET library. Rest of the libraries surveyed did not have the blockade system in the library software. **Borrowers' status, reading materials' status, and generation of reports** by computer were available at all the libraries surveyed except AUST, JU, and BAU. Reporting system of circulation services is one of the important library activities could be obtained from library database. All types of status, i.e. borrowing, fine, overdue, and other activities of circulation services can be made available using automated system. This system is very useful for smooth operation and management of library. This system enables us to submit any report to the authority regarding library services as and when necessary. NSU, IUB, EWU, BU, AIUB, DU and BUET libraries were able to generate library report from the respective library database. JU Library had the provision to produce the same but they were not able to practice and implement them. BAU and AUST Libraries did not have the reporting system by using automation. Online reservation system was found at NSU, EWU, AIUB, DU and BUET. Reservation of any book can be made by any user through online in the libraries surveyed other than IUB, BU, AUST, JU and BAU.

Information retrieval

To retrieve information from any full text or bibliographic database through online or offline is called **information**

237

retrieval. It could be done through manually or electronically. Information retrieval system was available at all libraries surveyed except AIUB and AUST libraries. It was learnt that at present searching facilities and information retrieval services are limited to faculty members of DU only. At the same time it was also informed by DU that searching and information retrieval services would be opened to all users after completing other formalities of the services.

Computer facilities with services

To some extent all university libraries surveyed had **computer facilities** in their respective library for library staffs as well library users. It may be mentioned here that AUST had only one old computer in their library for library staffs and AUST did not have any computer for library users. Computer facilities of AUST are very poor. AUST is under the process to computerize its library.

Usually, **CD and DVD writing services** were not available in any university libraries surveyed. But these services are available on request at NSU, IUB, EWU, BU, AIUB, BUET, JU and BAU libraries.

Internet is an amalgamation of inter-related computer networks permitting electronic communication on a global scale (Harrod, 1995:342). This is the age of Internet. In general, all users of universities are very much keen to have information very quickly and briefly. For that they

would like to use Internet. Internet facilities and services are available in all university libraries surveyed except AUST.

Pen drive sometimes referred to as a jump drive, the pen drive is a portable USB flash memory device that can be used to quickly transfer audio, video, and data files from the hard drive of one computer to another. With a construction that is small enough to fit into a pocket, the pen drive derives its name from the fact that many of these USB drive devices resemble a small pen or pencil in size and shape.

Visited on 30 Oct 2008 http://www.wisegeek.com/what-is-a-pen-drive.htm

All the university libraries surveyed except AUST had **pen drive port** facilities with the respective computer and services are provided through that facility. It was observed that some of the universities imposed some restrictions on the use of pen drive device due to virus.

Every library has computer in all universities surveyed except AUST. At the same time they also have printing facilities for getting print out of literature and database searches. Different types of computer services are provided by most of the university libraries surveyed. These university libraries should also have **network printer facilities** in order to provide that service to the

students and other users. NSU, IUB, EWU, DU, and BUET libraries have this facility and service. On the other hand; AIUB, BU, JU, and BAU libraries are under the process to have this type of services.

Facilities of **document delivery system through e-mail** are available in all university libraries surveyed except AUST, BUET and BAU.

E-mail is an electronic mail, a method of communicating rapidly and globally from a PC using networking/telecommunications hardware and dedicated software (Harrod, 1995:228). The advanced communication technologies offer one of the most important and fastest communication facilities to us by which contact can be made within a few minutes through out the world, which could not be possible earlier even in fifteen days. The library professionals in Bangladesh have gladly accepted this communication system. With the exception of AUST Library, all the university libraries surveyed had email facilities for communication purpose. Some of the university libraries, i.e. IUB and EWU provided library services through email.

Colour printer facilities and services were not available in any university libraries surveyed except BU and JU. But colour printers were available at the office of the top level management of the respective university. On request, colour printing services could be made available to users in using

those printers. Other than colour printers, normal black and white printers were available in all libraries surveyed.

Scanner, by which something is scanned for future use in the library, was available at NSU, IUB, EWU, BU, AIUB, and BAU libraries. Rest of the libraries did not have scanning facilities in the library.

Telecommunication facilities with services

Land-based phone services were available in all university libraries surveyed. On request land-based phone services were given to users from all university libraries surveyed.

Usually, **cell phone services** were not available in any libraries surveyed but on request library services could be managed by cell phone. It has been observed that if the cell phone is officially allotted in favour of librarian, library services definitely could be made available officially by using cell phone. Whatever services were given to users by cell phone that took place in personal level communication except NSU and BAU libraries? Librarians of NSU and BAU had official cell phone by which library services were provided and rest of the libraries did not have any official cell phone.

On the other part, **fax facilities** were offered by all libraries surveyed but library services were provided by

fax only by BUET and JU. No fax machine was available in any library surveyed. All universities had fax services in the office of the Vice-chancellor but not in the office of the Librarian.

Wi-fi (short for "wireless fidelity") is a term for certain types of wireless local area network (WLAN) that use specifications in the 802.11 family. *Wi-Fi* is the popular term for a high-frequency wireless local area network (WLAN) technology. [Visited on 27 October 2008 http://www.bitpipe.com/tlist/Wi-Fi.html].

Wi-Fi is such a system by which without wire connection Internet can be accessed. There was no such system in university libraries surveyed. At present, Wi-Fi system exists in ICDDR,B Library of Bangladesh.

Wimax *is* a wireless digital communications system, also known as IEEE 802.16, that is intended for wireless Metropolitan Area Network (MAN). [Visited on 27 October 2008 www.**wimax**.com/education]

Wi-fi and Wi-max system were not available in any libraries surveyed.

Closed Circuit Television (CCTV) is one of the important devices for security system of the library. The system will *help library* staff monitor equipment, reading materials and inside activities of the library. This system

also helps to reduce theft of valuable reading materials from the library. NSU, IUB, and BU libraries installed CCTV in their library and rest of the libraries surveyed did not install CCTV in their respective libraries.

Table 8: Existing Status of IT-based Library Services of Universities

Universities Services		NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Technical services	Security system of library services (e.g. RFID technology)	–	–	–	–	–	–	–	–	–	–
	Stock verification	–	√	–	–	–	–	–	–	–	–
	Photocopy services	√	√	√	√	–	√	√	√	√	√
Television facilities with services		√	√	–	–	–	–	–	–	–	√
E-alert services		√	√	√	√	–	–	–	–	–	–
Video conferencing		–	–	–	–	–	–	–	–	–	–
Readers' services	New arrivals	√	√	√	√	√	–	–	√	–	–
	E-dissemination of book covers' image	√	√	–	–	–	–	–	–	–	–
	CAS	√	√	√	√	√	–	–	√	–	–
	SDI	√	√	√	√	√	–	–	√	–	–
	Bibliographic and Indexing services	√	√	√	√	–	–	–	√	–	–
	E-counseling	√	√	√	√	–	–	–	–	–	–

243

Universities Services	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Electronic dissemination of services	√	√	√	√	–	–	–	√	–	√
Reference services	√	√	√	√	√	–	–	√	–	–
Inter-library loan services	–	–	–	–	–	–	–	–	–	–
Document delivery services	–	–	–	Partly	–	–	–	√	–	–
Literature search services	√	√	√	√	–	–	√	–	√	√
Virtual library services	–	–	–	–	–	–	–	–	–	–
FAQ (Frequently Asked Questions)	√	√	√	–	–	–	–	–	–	–
E-book services	√	√	√	–	–	–	–	–	–	–

Available   √   Not available   ‑

The table 8 mentioned above describes the status of technical services, television facilities, e-alert services, video conferencing, and reader's services of the university libraries surveyed.

Technical services

Technical services comprise the functions of security system of library services with **Radio Frequency Identification (RFID)** technology, **stock verification, and photographic reproduction**. Security system of library services with **RFID technology** was not available

in any university libraries surveyed. RFID technology is not offered by any libraries as the system is expensive. So the said university libraries did not introduce their security system with RFID technology. But NSU, EWU, and IUB libraries have the plan to introduce RFID in their respective library in the near future. **Stock verification** (inventory) services were done manually by all university libraries surveyed except IUB Library. The IUB Library performed their stock verification using automated library database. **Photocopy machines** were available in all university libraries surveyed except AIUB. **Photocopy services** are very important in any university of Bangladesh. Photocopying of complete books is not allowed. Users are responsible complying with the copyright Act. All the university libraries surveyed were very much conscious and aware about the copyright act. Photocopy system and services help us to reduce the system loss of libraries in terms of pilfering and cutting pages of books.

Television facilities and services

If any user is interested to learn something through various types of learning programme of television, that can be made possible by having television in university libraries. Among all university libraries surveyed; it was found that NSU, IUB, and BAU libraries had the facilities of television in their respective library.

E-alert services

E-alert service is an electronic communication by which attention can be drawn of users on any library services. Electronic dissemination of contents of journals could be treated as e-alert services. This communication can be made by email. This service may provide occasionally, not regularly. NSU, IUB, EWU, and BU libraries provided e-alert services excluding AIUB, AUST, DU, BUET, JU, and BAU libraries.

Video conferencing

The simultaneous connection, via telecommunications links coupled with video display, of remote locations to allow conversation of issues on pre-agreed topics. Exclusive systems are being supplemented by video and audio attachments to PCs (Harrod, 1995:670). **Video conferencing** is one of the latest inventions of Information, Communication and technologies (ICT). It is such a system by which a group of people can hold meeting and conferences from remote areas. At present, there is no video conferencing system in any university library surveyed in Bangladesh. It may be mentioned here that BU had the facilities of video conferencing system but not in the library. NSU, IUB and EWU were under process to have this system in their respective library. Rest of the universities surveyed did not have that facility.

Readers' services

Readers' services covers **new arrivals**, **electronic dissemination of book covers' image**, Current Awareness Services **(CAS)**, Selective Dissemination of Information **(SDI)** Services, **bibliographic and indexing** services, **e-counseling** services, **electronic dissemination** services, **reference** services, **inter-library loan** services, **document delivery** services, **literature search** services, **virtual reference** services, **FAQ** (Frequently Asked Questions) services and **e-book** services.

New arrivals mean; the reading materials which are newly arrived, listed in the library and disseminated among users through different mechanisms are called **new arrivals**. Newly arrived books' covers are scanned by scanner producing images of the book covers and these images are disseminated among users through email, this is called **electronic dissemination of books' image.** The newly arrived reading materials which are prepared for notifying and disseminating among users through different mechanisms are called **current awareness service (CAS).** When a specific library service is provided for a specific person is called **selective dissemination of information (SDI)** service.

Computer based new arrivals services had been provided by NSU, IUB, EWU, BU, AIUB, and BUET. **Electronic dissemination of books' image** services was not offered by any university libraries surveyed except

NSU and IUB. Amongst all libraries surveyed; NSU, IUB, EWU, BU, AIUB, and BUET libraries offered **CAS and SDI** services with the help of automated library database and electronic communication.

The facilities, procedures, and devices which are engaged to produce a bibliography consisting of a continuing series of publications or bibliographical information (Harrod, 1995:61). This is called **Bibliographical services. Indexing service** is a periodical publication which regularly and systematically indexes the contents of periodicals and sometimes other forms of publications, either on a general nature or within specified subject fields. This is called indexing services (Harrod, 1995:316). Computer based bibliographical and indexing services are offered by NSU, IUB, EWU, BU, and BUET.

Sometimes library personnel are asked **to provide counseling services through electronic communication.** This is called e-counseling. This type of service is provided to users by NSU, IUB, EWU, and BU libraries. Usually; AIUB, AUST and other public university libraries surveyed did not provide that service to users.

The distribution or sending of information to users is being made electronically, this is called **electronic dissemination** of services. This service is available in NSU, IUB, EWU, BU, BUET, and BAU libraries except AIUB, AUST, DU, and JU.

Which service is provided on the basis of information received from Internet is called computer based **reference services**. This service was available in NSU, IUB, EWU, BU, AIUB, and BUET libraries. Most of the time reference services are given by the use of Google search engine or other free search engine of Internet.

A book or other item lent between two libraries, which is being performed by electronic means is called computer based **Inter-library loan** services. This service was not offered by any libraries surveyed.

When the document is available on request; as an essential item; through fax, e-fax, and e-mail is called **document delivery** services**.** This service was not offered by any libraries surveyed except BU (partly) and BUET. BUET Library provided these services at free of cost. This type of document delivery services is being maintained through electronic communication and wire transfer of payment procedure via various agencies.

Literature search services

Literature search is a systematic and exhaustive search for published materials on a specific topic (Harrod, 1995:394). Usually, the users are involved with research they need latest information published in journals for their research work. These services might be available through online or offline, but users prefer to have this type of

information through online. Therefore, they want to have this information just after the publication of journals. NSU, IUB, EWU, BU, DU, JU and BAU libraries provided literature search services. Rest of the libraries surveyed did not provide this type of services due to limitation of IT-based facilities.

Virtual library services

Sophisticated computer simulations techniques can be used to provide users with library and information services by electronic means, with network document delivery and access, as it forms a real library but without physical existence (Harrod, 1995:671). This service was also not available in libraries surveyed.

FAQs (frequently asked questions) services

On Network news and Usenet, the questions; which are asked frequently, especially by new users; these are called FAQ. In anticipation of this, many Network groups have lists of frequently asked questions in an effort to block discussion (Harrod, 1995:271). This service was not available in all libraries surveyed except NSU, and IUB.

E-books services

E-book means electronic book. It indicates that hardcopy of any book is not e-book. It should be product of

electronic publishing (Harrod, 1995:225). E-books services were available at NSU, IUB, and EWU libraries. Other libraries surveyed did not provide any e-book services.

Table 9: Existing Status of IT-based Library Services of Universities

Universities / Services	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Administrative services (e-governance)	–	√	√	–	–	–	–	–	–	–
List server facilities and services	–	–	–	–	–	–	–	–	–	–
News clippings	√	√	–	–	–	–	–	–	–	–
Adaptable technology for disabled persons	–	–	–	–	–	–	√	–	–	–
Web based library services (Services available on library's own website/webpage)	√	√	√	√		–	Partly	√	–	
Electronic archives	√	–	–	√	√	–	–	–	–	–
Institutional Repository (IR)	–	–	–	√	–	–	–	–	–	–
Digital library initiatives	–	–	–	√	–	–	-	–	–	–
Report generation of library activities	√	√	√	√	–	–	–	Partly	–	–

Available [√]   Not available [-]

The table 9 includes administrative services (e-governance), list server facilities and services, news clippings, adaptable technology for disabled persons, Web

251

based library services (services available on library's own website/webpage), electronic archives, institutional repository (IR), digital library initiatives, and report generation of library activities.

Administrative services (e-governance)

Administrative service is governed by electronically is called e-governance. Administrative services on the highest level are usually performed by the university librarian, or his deputy, if one is assigned; on lower levels, by heads of departments and divisions within the university library. Administrative services include administering budget, planning library development, creating policies, training and supervising staff, maintaining relation with university officials, writing memorandum, conducting surveys and analysis of services, maintaining records and recommending promotions, participating in library conferences and professional associations, maintaining financial records, and etc. All these activities require permission from the top management of the respective university for easy management and administration of libraries. These types of activities can be done through email. If it can be done through email, it could save time and cost. Full-fledged paperless administration or e-governance system was not found in any university libraries surveyed. Hard copy filing system was found in all university libraries surveyed. Besides, part of e-governance management system was also found in private university libraries surveyed, such as IUB

and EWU. E-governance system was not found in NSU, BU, AIUB, AUST, DU, BUET, JU and BAU libraries.

List server facilities and services

It supports e-mail discussion group. There is only one platform that exists in Bangladesh named LISBD. This is a professional platform by which professionals, those who are members of LISBD group, may know many things on professional development. Many library professionals of NSU, IUB, EWU, BU, and BAU are the members of that group. Several issues were discussed through this group. This facility was not found in any university libraries surveyed.

News clipping services

Newspapers comprise an important source of information as they include the latest information in the form of news with updating. Being aware of their importance, libraries have been providing news clipping services in various ways to their users since newspapers were invented. In the beginning, manual methods of marking, cutting and pasting the useful news items were used, but today's libraries have automated this service by using information technology. This certainly has improved the access, delivery, and searching of news clippings in a web-based network environment for remote users (Matoria, 2008).

Computer based news clipping services were not available in any libraries surveyed excluding NSU and IUB. But manually this service was maintained in most of the libraries surveyed, though the services could be made available through the use of information technology.

Adaptable technology services for the disabled persons

Every university should have the provision for getting admission of disable students. At the same time, all university libraries should also have flexible technology library services for the disable persons of the society. But unfortunately there were no such services available for them in all libraries surveyed except DU Library. DU has the department for blind persons and DU Library also has separate section for the blind persons where braill system is available for them.

Web based library services

The library services are provided by the help of web, this is called web-based library services. The library should have its own web server by which it will allow users to get access to its resources. The server should be kept open for 24 hours, so that users can have access to the library resources from remote areas. These kind of services are online public access catalogue; access to electronic resources, online reference services, book reservation system and availability of digital publications through institutional repository, etc. All the services mentioned

above were available in NSU, IUB, EWU, BU, DU (partly) and BUET libraries except online reference services. Rests of the libraries surveyed have not yet started their web-based library services.

Building of electronic archives

Electronic archive is a set of electronic files stored on a publicly accessible server, available for download by way of a file transfer protocol (FTP) program. [Visited on 30 October 2008 bcs.bedfordstmartins.com/fieldworking3e/content/cat_060/01060-01.html]

The electronic archives for preservation of electronic journals, CDs, and other electronic resources have been maintained by NSU, BU and AIUB libraries. Rest of the libraries surveyed, except AUST, were under the process to build electronic archives. The online journals were being subscribed by the university libraries surveyed, some of the journals were preserved in the electronic archives.

Institutional Repository (IR) services and digital library initiatives

Institutional repository (IR) and digital library (DL) both are, to some extent, new concept in Bangladesh. Many of library professionals of Bangladesh understand, recognize,

and realize the importance of establishing institutional repository and digital library in Bangladesh. But now there are lots of challenges, difficulties, budgetary constraints and other limitations in establishing institutional repository and digital library in Bangladesh. In spite of that, there are some research organizations and institutions making efforts to build institutional repository and digital library in Bangladesh. Such as ICDDR,B (International Centre for Diarrhoeal Disease Research, Bangladesh) and BRAC University (BU), which had taken the initiatives for building their IR and DL in Bangladesh. Among all university libraries surveyed, NSU library claimed that they maintained IR and DL in preserving intellectual output of faculty members along with other online journal articles. EWU and IUB libraries were in planning phase of making institutional repositories but both were trying to organize print copy materials from faculty members and other parts of universities. Rest of the university libraries surveyed did not take any initiative for IR and DL due to their financial constraints.

Report generation of different library activities

There are several tasks to be performed by the library in order to fulfill smooth library services. Sometimes library administration needs various types of statistics of different library activities. Library automation is one of the important mechanisms for providing these types of statistics. If the library is automated, report generation of

different library activities could be done easily. If the system is not automated, it becomes very difficult to get the job done manually, which is eventually time consuming also. NSU, IUB, EWU, BU and DU (partly) libraries have that facility and rest of the libraries surveyed did not have that. Automated system is very much helpful for library administration.

Conclusion

Most of the university libraries are providing services in maintaining hybrid character. It means the university libraries surveyed maintained both the system, i.e. manual and technological. Through the survey it has been observed that all library professional realized the importance of information technology in providing library services. It was also found that most of the university libraries surveyed had started, to some extent, their functions with the help of information technology.

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WiMax system. Visited on 27 October 2008 www.**wimax**.com/education

Chapter VII

FINDINGS OF THE STUDY

This chapter assesses the existing situations of application of information technology in selected private and public university libraries of Bangladesh along with the performance of the library professionals, needs and expectations of users regarding information and university library services in Bangladesh. In total, 10 public and private university libraries and 130 users from these universities were surveyed. The findings of the survey are presented below.

1. Types of university libraries

The 10 libraries are broadly categorized into two groups. One is public university libraries and the other one is private university libraries. As per categorization of this investigation, 40 percent public university libraries and 60 percent private university libraries have been surveyed for this study. It is noted that these percentages of libraries will not be representative for all university libraries in the country.

Table 10: Distribution of libraries by types

Sl. No.	Types of University	Name of University
1.	Public universities	University of Dhaka (DU)
2.		Bangladesh University of Engineering and Technology (BUET)
3.		Jahangirnagar University (JU)
4.		Bangladesh Agricultural University (BAU)
5.	Private universities	North South University (NSU)
6.		Independent University, Bangladesh (IUB)
7.		East West University (EWU)
8.		BRAC University (BU)
9.		American International University, Bangladesh (AIUB)
10.		Ahsanullah University of Science and Technology (AUST)

The surveyed libraries have been included from various aspects as per types of universities. The above-mentioned libraries could be categorized as follows:

- General university (all types of disciplines)
- Residential university (all types of disciplines)
- Agricultural university
- Science and technology university
- Ranking of private universities according to University Grants Commission of Bangladesh

The table 10 presents all types of university libraries according to the above discussion.

Facilities of the libraries

Table 11: Distribution of libraries as per area status

Name of University Library	Sq. ft.	Category of Libraries
University of Dhaka (DU)	150830	Public university libraries
Bangladesh University of Engineering and Technology (BUET)	20000	
Jahangirnagar University (JU)	16000	
Bangladesh Agricultural University (BAU)	66000	
North South University (NSU)	11200	Private university libraries
Independent University, Bangladesh (IUB)	12000	
East West University (EWU)	12000	
BRAC University (BU)	9000	
American International University, Bangladesh (AIUB)	5500	
Ahsanullah University of Science and Technology (AUST)	8100	

The above-mentioned table 11 indicates that public university libraries were bigger than private university libraries. Dhaka University Library had 1,50,830 sq. ft., largest library in Bangladesh in terms of size. Among all private university libraries surveyed, American International University Bangladesh had smallest space for their library located on the basement of the respective premises. Public university libraries had enough spaces

rather than private university libraries. Private university libraries were experiencing space limitations.

Processing of library materials

Table 12: Distribution of libraries by status of methods of processing of reading materials

Name of University	Manual	Technological
North South University (NSU)	-	√
Independent University, Bangladesh (IUB)	-	√
East West University (EWU)	-	√
BRAC University (BU)	-	√
American International University, Bangladesh (AIUB)	-	√
Ahsanullah University of Science and Technology (AUST)	√	-
University of Dhaka (DU)	-	√
Bangladesh University of Engineering and Technology (BUET)	-	√
Jahangirnagar University (JU)	√ (mostly)	- (partly)
Bangladesh Agricultural University (BAU)	√ (mostly)	- (partly)

This table 12 shows us the status of method of processing of library materials. There were two methods of processing of library materials those had been followed by university libraries. One was manual and another one was

technological, i.e. computer based technology. Some of the universities have not yet followed technological method for processing reading materials although they maintained IT based operating system. NSU, IUB, EWU, BU, AIUB, DU, and BUET libraries processed their reading materials by using library databases, which had been maintained through library software. AUST processed reading materials manually. On the other hand JU and BAU mostly performed their processing job manually but a little part of that was done by technologically.

Table 13: Percentage wise status of methods of processing of reading materials of public and private universities

Method	University				Total	
	Private University		Public University			
	No.	%	No.	%	No.	%
Manual	1	16.33	2	50.0	5	50.0
Technological	5	83.67	2	50.0	5	50.0
Total	6	100.00	4	100.0	10	100.0

The above-mentioned comparative picture (table 13) shows us that 50% public and 83.67% private university libraries (surveyed) processed their reading materials technologically and rest of the universities followed manual method.

Catalogue

Table 14: Distribution of libraries by status of cataloguing code used by university libraries for processing of reading materials

University	AACR-II-Rev.	AACR-II
North South University (NSU)	√	-
Independent University, Bangladesh (IUB)	√	-
East West University (EWU)	-	√
BRAC University (BU)	-	√
American International University, Bangladesh (AIUB)	√	-
Ahsanullah University of Science and Technology (AUST)	-	√
University of Dhaka (DU)	-	√
Bangladesh University of Engineering and Technology (BUET)	√	-
Jahangirnagar University (JU)	-	√
Bangladesh Agricultural University (BAU)	√	-

This table 14 appears that NSU, IUB, AIUB, BUET, and BAU university libraries used Anglo American Cataloguing Codes revised edition II and EWU, BU, AUST, DU, and JU university libraries used Anglo American Cataloguing Codes II edition.

Table 15: Percentage wise status of cataloguing code used by university libraries for processing of reading materials

Cataloguing Code	University				Total	
	Private University		Public University			
	No.	%	No.	%	No.	%
AACR-II Rev. with year	3	50.0	2	50.0	5	50.0
AACR-II	3	50.0	2	50.0	5	50.0
Total	6	100.0	4	100.0	10	100.0

This table 15 appears that 50% public and private university libraries (surveyed) used Anglo American Cataloguing Codes revised edition II and in the same way rest 50% public and private university libraries used Anglo American Cataloguing Codes II edition. All university libraries were following standard cataloguing codes for processing purpose.

Table 16: Distribution of libraries by status of form of catalogue used in the university libraries

University	Card form	Microforms	Automated	Others
North South University (NSU)	-	√	√	-
Independent University, Bangladesh (IUB)	-	-	√	-
East West University (EWU)	-	-	√	-
BRAC University (BU)	-	-	√	-
American International University, Bangladesh (AIUB)	-	√	-	-
Ahsanullah University of Science and Technology (AUST)	√	-	-	-
University of Dhaka (DU)	√	-	-	√
Bangladesh University of Engineering and Technology (BUET)	√	-	√	-
Jahangirnagar University (JU)	√	-	-	-
Bangladesh Agricultural University (BAU)	√	-	-	-

The above-mentioned table 16 explains what form of catalogue was being used by university libraries surveyed. All public university libraries surveyed and AUST used card form of catalogue. NSU, IUB, EWU, and BU used automated form.

Figure 1. Percentage wise status of form of catalogue used by university libraries
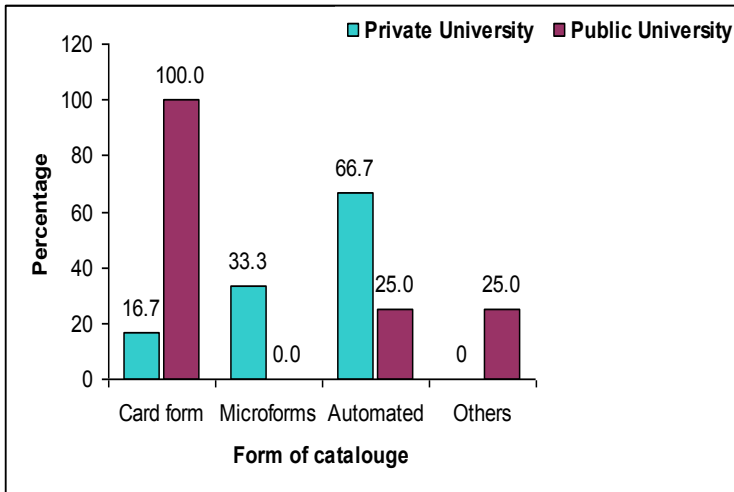
Figure 1 shows that all public university libraries (surveyed) maintained card catalogue, of which 25% libraries preserved automated and 25% preserved other format card catalogue. On the other hand 66.7% private university libraries used automated card catalogue, 33.3% private university libraries used microforms. Among all private university libraries surveyed, 16.7% libraries used card form catalogue also.

Table 17: Distribution of libraries by cataloguing status of serials (journals, magazines, periodicals) holdings

University	Yes	No
North South University (NSU)		-
Independent University, Bangladesh (IUB)	√	
East West University (EWU)		-
BRAC University (BU)		-
American International University, Bangladesh (AIUB)		-
Ahsanullah University of Science and Technology (AUST)		-
University of Dhaka (DU)	√	
Bangladesh University of Engineering and Technology (BUET)	√	
Jahangirnagar University (JU)		-
Bangladesh Agricultural University (BAU)		-

IUB, DU and BUET libraries catalogued their serials holdings as it reflected in the above-mentioned table 17. Rest of the universities surveyed has not yet catalogued their serials holdings.

Table 18: Distribution of libraries by status of list of subject headings used in different university libraries

University	Sears list	Library of Congress	Others
North South University (NSU)	√	√	-
Independent University, Bangladesh (IUB)	-	-	√
East West University (EWU)	√	√	-
BRAC University (BU)	√	-	-
American International University, Bangladesh (AIUB)	√	-	-
Ahsanullah University of Science and Technology (AUST)	√	-	-
University of Dhaka (DU)	√	√	-
Bangladesh University of Engineering and Technology (BUET)	-	√	-
Jahangirnagar University (JU)	√	-	-
Bangladesh Agricultural University (BAU)	-	√	-

Out of 10 universities surveyed; NSU, EWU, BU, AIUB, AUST, DU, and JU libraries used Sears list of subject headings. NSU, EWU, DU, BUET, and BAU, used Library of Congress (LC) subject headings. On the other hand IUB Library used other subject headings which did not cover LC and Sears list. NSU, EWU, and DU practised LC and Sears list both headings as it has been shown in the table 18 mentioned above.

Library statistics

Table 19: Distribution of libraries by status of resources as of 31 December 2007

Numbers	University									
	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Total number of books	22977	29000	21332	16828	30000	8543	616865	125066	90531	152447
Total number of journals	9567	256	134	20	320	12	255	218	300	125
National (title)	17	79	120	6	20	10	89	0	100	71
International (title)	9550	177	14	14	300	02	166	218	200	54
Total number of bound journals	5700	1780	0	0	300	0	0	17847	12635	37420
Total number of slides	0	0	0	0	0	0	0	0	0	0
Total number of daily newspapers	24	13	16	6	04	04	24	4	6	19
Total number of news clippings (subjects)	420	42	18	0	22	0	0	0	0	0
Total number of audio cassettes	159	499	135	50	20	0	0	25	0	39
Total number of video cassettes	103	119	0	30	1600	0	0	150	0	15
Total number of microfilms (rolls)	0	0	0	0	0	0	3000	0	0	105
Total number of microfiches	0	0	0	0	0	0	100	0	0	1494
Total number of CD-ROMs/DVD-ROMs	1357	1936	1268	200	0	0	14	655	300	281
Total number of reports/ thesis/dissertations	0	2896	274	0	2000	200	3000	2249	0	8656
Total number of maps/atlases/globes	0	108	6	0	7	0	200	5	0	0
Total number of e-resources (title)	9550	6000	9530	10000	121	25	10000	1050	1860	2850
Total number of online subscribed databases	6	28	3	24	3	0	18	2	1	1
Total number of online complimentary databases	4	4	4	0	2	0	0	2	2	3

This table 19 is explaining that the DU Library had (among libraries surveyed) the highest number of books in their collection including rare books. AUST had the lowest number of books in their collections. Slides were the only resource which was not available in any library. Every library subscribed journals and daily newspapers as per the need of the respective university. Highest number of daily newspapers was subscribed by DU and NSU. Among the 10 libraries surveyed; NSU, IUB, EWU, BU, AIUB, BUET and BAU preserved audiovisual materials. DU, JU, and AUST did not have any audiovisual materials in their respective libraries. Only DU and BAU had microfilms (rolls) and microfiches. Now-a-days microfilms and microfiches are not popular at all instead CD-ROMs and DVD-ROMs are very much popular and widely accepted to all. Considering technological advancement; NSU, IUB, EWU, BU, DU, BUET, JU, and BAU kept CD-ROMs and DVD-ROMs in their respective libraries and provided services by the same except AIUB and AUST. All university libraries surveyed had a good number of reports, thesis, dissertations, and a small number of maps, globes, atlases, except NSU, BU, and JU. Besides, all university libraries maintained online journals subscription on payment and complimentary basis excluding AUST. DU Library had rare book section.

Table 20: Distribution of libraries by status of library staff

Numbers	University									
	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Total number of professionals	9	12	14	4	1	1	18	11	7	10
MA in Library and Information Sc.	9	12	14	2	1	1	18	11	7	10
Total number of Para-professional (Diploma and Certificate)	3	-	1	2	2	1	50	10	9	13
Total number of non-professional (not having any degree on Library Science)	7	1	10	9	2	3	62	22	37	1
Total number of technical (mechanical and electrical) staff	-	-	1	2	6	-	21	-	-	-
Total number of general staff (viz. janitor, sweeper, guard, etc)	-	-	1	2	6	-	21	-	-	-

No library can run without professional staff. The above-mentioned table 20 has been shown like that DU in government sector and East West University in private sector maintained highest number of professional staff in their respective libraries. A good number of para-professional and non-professional staff of DU is engaged in providing library services. Among 10 libraries surveyed, AIUB and AUST maintained a minimum professional staff by which including some non-professional staffs operated their respective library.

Table 21: Distribution of libraries by computers and infrastructure facilities

University	Has the library introduced computer facilities?	Total number of computers used in the library	Total number of computers used by the library staff	Total number of computers used by the library users	Total number of computers dedicated for on-line journals
NSU	Yes	39	11	28	11
IUB	Yes	32	9	20	20
EWU	Yes	17	11	6	6
BU	Yes	55	9	46	5
AIUB	Yes	8	4	4	2
AUST	Yes	1	1	0	0
DU	Yes	36	23	13	2
BUET	Yes	61	19	42	1
JU	Yes	13	13	2	2
BAU	Yes	23	8	10	0

In table 21 it appears that all libraries surveyed had the facilities of computers. BUET had the highest number of computers in public sector and BU had the highest number of computers in private sector. AUST had the minimum number of computers in their library. AUST paid less attention to organize their library. They recently recruited their Librarian. Highest numbers of computers are used by the library staff at NSU and EWU in private sector and at DU in public sector. A good number of computers were used by the library users at all university libraries surveyed except AUST. At the same time there were some computers in the libraries which were dedicated for searching online journals only except AUST and BAU.

Table 22: Distribution of libraries by status of hardware configuration

University	Configuration	RAM (MB)	Hard Disk (MB)	Processor (MHz)	Monitor (Inch)	Graphics Card (MB)	CD-RW (Speed)	DVD-RW (Speed)
NSU	Highest	512	81920	3	17	512	52	4
NSU	Lowest	128	1024	1	15	8	52	4
IUB	Highest	412	81920	3	17	64	52	16
IUB	Lowest	64	6144	1	14	8	52	-
EWU	Highest	512	81920	3	15	512	52	52
EWU	Lowest	128	40960	1	15	8	48	48
BU	Highest	1024	81920	2	15	128	52	-
BU	Lowest	512	40960	1	15	8	46	-
AIUB	Highest	512	81920	1	14	-	24	-
AIUB	Lowest	512	81920	1	14	-	24	-
DU	Highest	512	81920	3	15	32	52	-
DU	Lowest	64	6144	1	14	8	52	-
BUET	Highest	256	40960	3	17	64	52	-
BUET	Lowest	128	20480	2	15	8	52	-
JU	Highest	256	81920	3	17	-	52	-
JU	Lowest	64	205	1	12	-	52	-
BAU	Highest	512	81920	1	17	-	-	-
BAU	Lowest	512	81920	1	17	-	-	-

All the university libraries surveyed have shown their highest and lowest configuration in the above-mentioned table 22 with the exception of AUST. The data about the hardware configuration was not available in the questionnaire of AUST as they had only one old computer in the library. It

looks good that hardware configuration of all the university libraries surveyed were good except a few.

Table 23: Distribution of libraries by status of computer facilities for users

University	Pen drive port facilities for users	Printer facilities for users	If yes, do the users need to pay to avail that facility	Do you have internet facilities for your users	Do you have facilities of CD/DVD-ROM searching	Do you have document delivery system through e-mail	If yes, how many mega bytes can you send at a time
NSU	√	√	√	√	√	√	
IUB	√	√	-	√	√	√	60
EWU	√	√	-	√	√	√	10
BU	√	√	√	√	√	√	
AIUB	√	√	√	√	√	√	
AUST	-	-	-	-	-	-	
DU	√	√	√	√	-	√	10
BUET	√	-	-	√	√	-	
JU	√	√	-	√	√	√	56
BAU	√	√	√	√	√	-	

The computer facilities are being offered by the university libraries surveyed, it has been reflected in the table 23 mentioned above. AUST did not have any computer facilities for their users. All the libraries had pen drive facilities, internet facilities, and CD/DVD-ROM searching facilities for their users. There are some restrictions imposed by IUB, EWU, and BUET in giving the printer facilities to their users. NSU, BU, AIUB, DU, and BAU provided printer facilities to the students on payment basis. Except BUET and BAU, all other libraries had the provision to deliver the document through e-mail, of which; IUB could send up to 60 mb, EWU and DU could send up to 10 mb, and JU could send up to 56 mb, at a time.

Table 24: Distribution of libraries by status of software and network facilities for the users

University	Name of library software used	Name of network software used	Do you have your own databases?	Is your system connected to any network?	Local Area Network (LAN)	Wide Area Network (WAN)	National network (s), please write the name	International network (s), please write the name
NSU	NSU-LMS	-	√	√	√	√	-	-
IUB	Locally developed	Windows 2000 server	√	√	√	√	-	√
EWU	EWULIBMIS	Windows 2000 serve	√	√	√	√	-	-
BU	BU-LMS	-	√	√	√	√	-	√
AIUB	BOOK-TRAXX	SQl/ORACLE	√	√	√	-	-	-
AUST	Not Yet Developed (under process)	-	-	-	-	-	-	-
DU	GLAS	-	√	√	√	√	-	√
BUET	BUET-LIB	Windows 2000 server	√	√	√	√	-	√
JU	WIN/ISIS	SQl/ORACLE	-	√	-	√	-	√
BAU	Not Yet Developed	Windows 2000 server	√	√	√	-	√	√

This table 24 shows us that all the libraries surveyed had software facilities to maintain the library database. Among them JU used CDS/ISIS library software developed by UNESCO; IUB developed in-house database locally with the help of CDS/ISIS; NSU, EWU, BU, AIUB, and BUET used domestic library software developed by computer science department of respective university; DU used one of the expensive library software named GLAS developed by a professional IT company. DU Library was facing problems with the software as DU did not update the software (GLAS) after installation and lack of maintenance agreement with the software company. BAU and AUST Libraries not yet developed any software for their library. All the universities had network facilities, of which; IUB, EWU, AIUB, BUET, JU, and BAU were able

to mention the name of software used for network facilities. All the libraries had their own databases and connected with local and international network.

Table 25: Status of inputting records in the databases by different libraries

Name of database	University	
	Private Records	Public Records
Books database (NSU)	28,977	-
E-journal Archive database (NSU)	20,000	-
E-book Archive database (NSU)	1,000	-
A-V Materials database (IUB)	1,460	-
Articles (IUB)	7,000	-
Books database (IUB)	19,500	-
BU-LMS (BU)	17,000	-
EWV Library MIS (EWU)	6,129	-
Book Traxx (AIUB)	28,500	-
GLAS (DU)	-	1,00,000
BUETLIB (BUET)	-	1,25,066
BAU Periodical Holding (BAU)	-	2,000
BAU Thesis Database (BAU)	-	3,000
WIN/ISIS (JU)	-	24,000

A comparative picture is made in respect of data entered into the databases of public and private university libraries. This table 25 shows us the name of databases and the number of records entered into the databases. The highest numbers of records were entered by BUET and DU in public sector.

Table 26: Distribution of libraries by status of willingness and reasons of joining network

University	To answer research queries	To provide reference services faster	To make users aware with updated information through the systems	To share with each other within the linked organizations	To access more literature with minimum costs	To meet the necessity with minimum investment	To install global link with relevant organizations	To acquire updated information as and when necessary	To control duplication of information	To save money	To avoid unnecessary delayed of postal communication
NSU	√	√	√	√	√	√	√	√	√	√	√
IUB	√	√	√	√	√	√	√	√	√	√	√
EWU	√	√	√	√	√	√	√	√	√	√	√
BU	√	√	√	√	√	√	√	√	√	√	√
AIUB	√	√	√	√	√	√	√	√	√	√	√
AUST	√	√	√	√	√	√	√	√	√	√	√
DU	√	√	√	√	√	√	√	√	√	√	√
BUET	√	√	√	√	√	√	√	√	√	√	√
JU	√	√	√	√	√	√	√	√	√	√	√
BAU	√	√	√	√	√	√	√	√	√	√	√

The above-mentioned table 26 indicates that all the university libraries surveyed were very much positive to join with any network for various reasons, such as to answer queries, to provide reference services faster, to make users aware with the updated information system, to access more literature with minimum cost, to meet the necessity with minimum cost, to install global link with relevant organizations, to control duplication of information, to avoid unnecessary delay of postal communication, and to save money, etc. It has been shown here all the libraries were, to a great extent, optimistic towards the advancement of information technology as well to utilize these IT facilities emerged in the 20th century.

Table 27: Distribution of libraries by status of joining consortium, providing services by IT facilities, and opinion about existing facilities of the libraries surveyed

	Name of consortium, service facilities, and opinion about facilities	University									
		NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
If you have joined or planning to join any consortium, please write the name of them	BIPC	√	-	√	√	-	-	√	√	√	-
	PERI	-	√	√	√	-	-	√	√	√	-
	JSTOR	-	√	√	√	-	-	-	-	-	-
Are requests made by the users through use of the following	Surface mail	√	-	-	√	√	-	√	√	√	√
	Telephone	√	√	√	√	√	√	√	-	-	√
	Fax	-	-	-	-	-	-	-	√	√	-
	Email	-	√	√	-	-	-	-	-	-	-
Please give your opinion about the above existing facilities whether these are	Almost Adequate	√	√	√	√	√	√	√	√	√	-
	Much Inadequate	-	-	-	-	-	-	-	-	-	√

There is only one consortium at present exists in Bangladesh named Bangladesh INASP-PERI Consortium (BIPC). This consortium is coordinated by the Bangladesh Academy of Sciences. Many of us are familiar with this consortium as PERI. JSTOR is an archive preserving old journals but many of us treated JSTOR as consortium. IUB, EWU, and BU had subscribed JSTOR. NSU, IUB, EWU, BU, DU, BUET, JU, were the subscribers of BIPC. It is found in the table 27 mentioned above that NSU, BU, AIUB, DU, BUET, JU, and BAU, had provided on-request services through surface mail and telephone. On the other hand IUB and EWU gave their services by telephone and e-mail. Fax services were being provided by

BUET and JU. Opinion, about the existing facilities of libraries, expressed by all the libraries surveyed and stated that facilities were almost adequate; whereas BAU felt that they had much adequate facilities.

Figure 2. Percentage wise status of services are provided by mail, telephone, fax, and e-mail by public and private university libraries
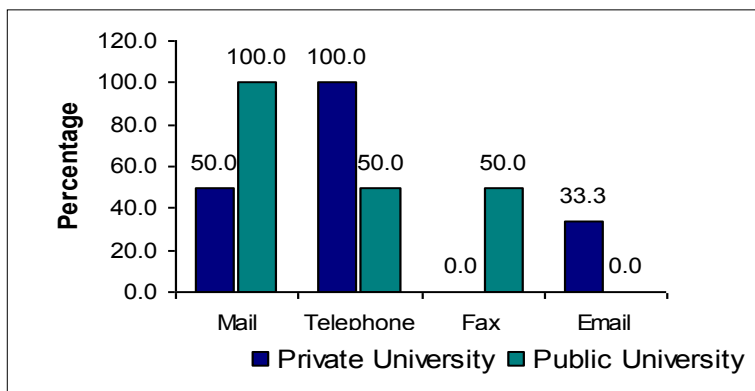
A comparative study of providing library services by public and private universities through mail, telephone, fax and email, have been shown in the figure 2 mentioned above. All public university libraries provided services through mail; of them, 50% public universities used telephone and fax but no service was given by email. On the other hand, all private university libraries surveyed gave services by telephone; of which, 50% and 33% private libraries provided services through mail and email respectively but no service was given by fax.

Table 28: Distribution of libraries by status of budget in Taka

University	Year		
	2004	**2005**	**2006**
NSU	60,50,000/-	81,95,000/-	81,51,000/-
IUB	1,29,00,000/-	1,00,05,000/-	1,15,00,000/-
EWU	76,00,000/-	71,00,000/-	80,00,000/-
BU	45,00,000/-	40,65,812/-	50,12,000/-
AIUB	95,00,000/-	80,00,000/-	10,00,000/-
AUST	5,40,000/-	6,50,000/-	7,52,000/-
DU	68,30,000/-	91,00,000/-	84,00,000/-
BUET	95,35,000/-	98,64,000/-	93,55,000/-
JU	-----	39,45,000/-	18,25,000/-
BAU	1,54,96,000/-	31,00,000/-	31,00,000/-

Source: UGC annual report 2006 and different university libraries

Budget is one of the important factors by which the library runs. Year-wise annual budget of the respective library has been shown in the table 28 and found that IUB Library was maintained with highest allocation of budget in both public and private sector. On an average, IUB had more than 10 million taka in their budget. In 2004, BAU Library was allocated Tk. 1,54,96,000/- to operate their library. But Tk. 31,00,000/- was allocated for 2005 and 2006. Unusual budget was seen for BAU in 2004, it was speculated that they might operate a project in the library at that time. In private sector AUST had a poor budget for their library. Other than AUST, all private university libraries had a very reasonable budget and it indicates that in the near future the library's budget will be increased gradually. On the other

281

hand, public university library's budget is very poor in terms of human resources, reading materials, and physical environment of the library. This amount should be increased by the government for the greater interest of faculty members, students and staff members.

Table 29: Distribution of libraries by status of services

Services	University									
	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Reading room services for textbooks	√	√	√	√	-	√	√	√	√	√
For Reference Books	√	√	√	√	-	√	√	√	√	√
Content Awareness (through library display)	√	√	√	-	√	√	√	√	√	√
Content Announcement (communicating users)'	√	√	-	-	-	-	-	√	√	√
Indexing	√	√	-	√	√	√	-	√	-	√
Bibliographic	√	√	-	√	√	√	-	√	-	√
On line searching	√	√	√	√	√	-	√	√	√	√
Reference services	√	√	√	√	√	√	√	√	√	√
E-alert services	-	√	√	√	√	-	-	√	√	-
Helping users in online searching	√	√	√	√	√	-	√	√	√	√
Translation	√	-	-	-	√	-	-	-	-	√
CD-ROM Searching	√	√	√	√	√	-	-	√	√	√
SDI	√	√	√	-	-	-	√	√	√	√
Photocopying	√	√	√	√	√	√	√	√	√	√
For reading Journals	√	√	√	√	√	√	√	√	√	√
Abstracting	√	-	-	-	-	-	-	√	-	-
Counseling	√	√	√	√	√	√	√	√	√	√
Retrospective	-	√	√	-	√	-	-	√	-	√
Referral services	√	√	√	√	√	-	√	√	√	√
Consultation (users guidance)	√	√	√	√	√	√	√	√	√	√
E-mail services	√	√	√	√	√	-	-	√	√	-
Others	√	√	-	-	-	-	-	√	-	-

282

This table 29 shows us that various library services provided by the libraries surveyed. Textbooks and reference books services were available in the reading room of all university libraries except AIUB. 90% university libraries disseminated current awareness services through different mechanism excluding BU. NSU, IUB, BUET, JU, and BAU delivered services by content announcement. 83% private university libraries and 50% public university libraries gave indexing and bibliographic services. Online searching facilities were available in all university libraries except AUST. Reference services have been provided by all universities. Electronic alert services were given by 67% private university libraries and 50% public university libraries. All libraries helped users in online searching except AUST. A few universities (NSU, AIUB, BAU) gave translation services only. Photocopying, reading journals, counseling, and users' guidance services were provided by all libraries surveyed. CD-ROM searching facilities were available in all libraries surveyed except AUST and DU libraries. SDI services were given by all except BU, AUST and AIUB. NSU and BUET offered abstracting services. 50% private university libraries and 50% public university libraries furnished retrospective services. Referral services were offered by all except AUST. 83% private university libraries and 50% public university libraries offered email services. Other services, which are not mentioned in the table above, were offered by NSU, IUB, and BUET only.

Table 30: Distribution of libraries by status of mode of services

Mode of services	Methods	University									
		NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Mode of existing Library and Information Services	Traditional/Manual	-	-	-	-	√	√	√	-	√	√
	Technological	√	√	√	√	-	-	-	√	-	-
Mode of existing Library circulation system	Traditional/Manual	-	-	-	-	-	√	√	-	√	√
	Technological	√	√	√	√	√	-	-	√	-	-
Mode of existing system of catalogue searching	Traditional/Manual	-	-	-	-	-	√	√	-	√	√
	Technological	√	√	√	√	√	-	-	√	-	-
If technological, please mention the system	Through Internet	√	√	√	√	-	-	-	√	-	-
	Through Intranet	-	-	-	-	√	-	-	-	-	-

Four types of library services are discussed in the table 30 mentioned above. This question was prepared to see in what form the services were given by different university libraries. All private university libraries delivered their services technologically except AIUB and AUST. In public sector, BUET delivered their services technologically rather DU, JU, and BAU provided services in traditional method. Circulation system operated technologically by all libraries surveyed excluding AUST, DU, JU, and BAU. Cataloguing searches were made available through technologically by NSU, IUB, EWU, BU, AIUB, and BUET; and they used Internet, whereas AIUB used Intranet. AUST, DU, JU, and BAU had the provision of searching catalogue in traditional system. If

284

we compare public and private universities, it is found in the above-mentioned table that 84% private university libraries offered library services technologically, whereas 25% public university libraries provided services technologically, and rest of the university libraries provided services manually.

Figure 3: Percentage wise status of mode of library services
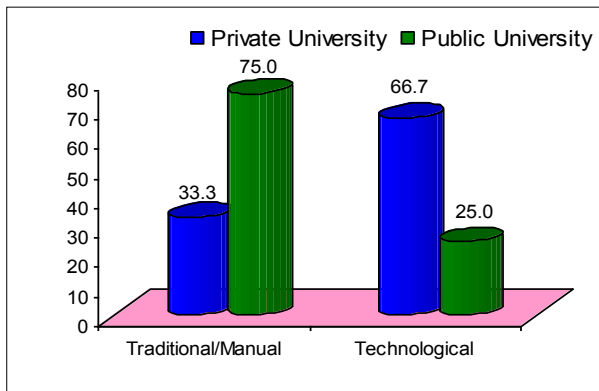
The figure 3 shows that 75% public university libraries provided library services manually and 66.7% private university libraries offered their services technologically. On the other hand, 25% public university libraries provided library services technologically and 33.3% private university libraries offered their services manually.

Figure 4: Percentage wise status of mode of circulation services
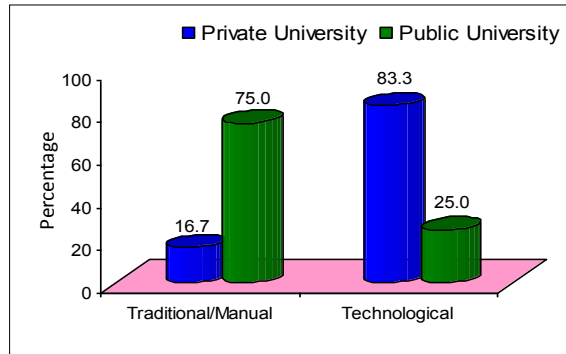
The figure 4 indicates that 75% public university libraries provided circulation services manually and 83.3% private university libraries offered circulation services technologically. Alternatively, 25% public university libraries provided circulation services technologically and 16.7% private university libraries offered their circulation services manually.

Figure 5: Percentage wise status of mode of catalogue searching
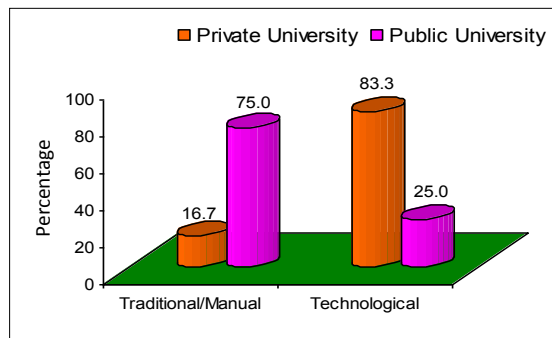
The figure 5 reflects that 75% public university libraries searched catalogue manually and 83.3% private university libraries searched catalogue through Internet and Intranet. Alternatively, 25% public university libraries searched catalogue technologically and 16.7% private university libraries searched catalogue manually.

Table 31: Distribution of libraries by status of technologies are used for library services

Type of services	University									
	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Computer	√	√	√	√	√	√	√	√	√	√
Facsimile	-	-	-	√	-	-	-	-	-	-
Telex	-	-	-	-	-	-	√	-	-	-
Telephone	√	√	√	√	√	√	√	√	√	√
Photocopier	√	√	√	√	-	√	√	√	√	√
Electronic Mail	√	√	√	√	√	-	√	√	√	√
Television	√	√	-	-	-	-	-	-	-	√
Internet	√	√	√	√	√	-	√	√	√	√

The above-mentioned table 31 indicates what types of technologies are used for providing library services. It is showing that computer technology was used by all libraries surveyed. Facsimile was used by only BU, hence telex was used only by DU. Rest of the libraries have not used facsimile and telex technologies. Telephone was used by all libraries surveyed. Photocopier was used by all libraries surveyed except AIUB. Email technology was available in all universities except AUST. NSU, IUB, and

287

BAU had television in offering services. Internet technology was available in all universities except AUST.

Table 32: Distribution of libraries by status of types of services demanded by the users

Type of services	University									
	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Borrowing Books	√	√	√	√	√	√	√	√	√	√
Reference Services	√	√	√	√	√	√	√	√	√	√
Reading Room Services	√	√	√	√	√	√	√	√	√	√
Photocopying Services	√	√	√	√	√	√	√	√	√	√
OPAC (Online Public Access Catalogue) Search	√	√	√	√	√	-	√	√	√	-
On-line Literature Searching	√	√	√	√	√	√	√	√	√	√
Internet/web browsing Services	√	√	√	√	√	√	√	√	√	√
Information Services through TV Programmes	-	-	-	-	-	-	-	-	-	√
CD-ROM Search	√	√	√	√	√	√	√	√	√	√
Over Telephone	√	√	√	√	√	√	√	√	√	√
Through e-mail	√	√	√	√	√	-	√	√	√	√
Borrowing Journals	√	√	√	√	√	√	-	√	-	√
Through On-line Network	√	√	√	√	√	-	√	√	√	√
Through Fax	√	-	-	√	√	-	√	√	√	-
Through Telex	-	-	-	-	-	-	-	-	-	-

This table 32 indicates that all types of library services, mentioned above, were demanded by the users of all libraries surveyed. Only one library service, i.e. information services through TV programme, was not demanded by the users of any university except BAU. OPAC search was not demanded by the users of AUST

and BAU. Email and online network services were not demanded by the users of AUST. Fax service was demanded by the users of NSU, BU, AIUB, DU, BUET and JU. Telex service was not wanted by any user of any university surveyed.

Table 33: Status of libraries should be computerized with the facilities of information technologies

For	University									
	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Sophistication	√	√	√	√	√	√	√	√	√	-
Smooth services	√	√	√	√	√	√	√	√	√	√
Less time consuming	√	√	√	√	√	√	√	√	√	√
Shortage of sufficient space	√	√	-	√	√	√	√	√	√	-
Attracting readers	√	√	√	√	√	√	√	√	√	-
Cost effective	√	√	√	√	√	√	√	√	√	√
Accuracy	√	√	√	√	√	√	√	√	√	√
More effective literature search	√	√	√	√	√	√	√	√	√	√
Makes an user efficient	√	√	-	√	√	√	√	√	√	√
Less errors	√	√	-	√	√	√	√	√	√	√
Shortage of staff	√	-	-	√	-	√	√	√	√	-
Increase efficiency of library staff	√	√	√	√	√	-	√	√	√	√
Increases standard of services	√	√	√	√	√	√	√	√	√	√
Providing more effective services	√	√	√	√	√	√	√	√	√	√
Broadened the scope of services	√	√	√	-	√	√	√	√	√	√

A set of questions was prepared in the above table 33 to find out why the libraries should be computerized. The

above-mentioned reasons were accepted, to some extent, by all universities with a few exceptions. At one point IUB, EWU, AIUB, and BAU were not in favour of installation of computers due to shortage of staff in the respective university.

Table 34: Status of problems in providing services with IT facilities

Problems	University									
	NSU	IUB	EWU	BU	AIUB	AUST	DU	BUET	JU	BAU
Cost increases	√	√	√	√	√	√	√	√	√	√
Non-availability of IT related person	√	-	-	-	-	√	-	√	√	√
Lacking of computer literacy of users	√	-	-	√	√	√	-	√	-	√
Time consuming	-	-	-	√	√	-	-	-	-	-
Technical barrier to access	√	√	-	-	√	√	√	√	-	√
Operating barrier to access	√	√	-	-	√	√	-	√	-	-
Lacking of IT knowledge of staff	√	-	-	-	√	√	√	√	√	-
Makes a staff idle	-	-	-	-	-	-	√	-	-	-
Laborious	-	√	-	-	-	-	-	√	-	-
Budgetary problems	√	√	-	-	√	√	√	√	√	√
Environmental problems	√	√	-	-	√	√	√	√	-	-

The above-mentioned table 34 shows that the different types of problems emerged due to introduction of information technology in libraries. Among them, cost increase was one of the problems which agreed by all libraries surveyed. NSU, AUST, BUET, JU, and BAU accepted that non-availability of IT related person was a problem; NSU, BU, AIUB, AUST, BUET and BAU agreed that lacking of computer

literacy was a difficult job; BU and AIUB said it was time consuming; NSU, IUB, AIUB, AUST, DU, BUET and BAU felt that they had technical barrier to access; NSU, IUB, AIUB, AUST, and BUET recognized that they had operating barrier to access; NSU, AIUB, AUST, DU, BUET and JU admitted that lacking of IT knowledge of staff was a difficult job; only DU said that IT made staff idle; IUB and BUET expressed IT was a laborious job. All university libraries surveyed said that they faced budgetary problems by introduction of IT in their libraries except EWU and BU; whereas it has been seen in the budget table 19 that IUB maintained their library with highest allocation of budget. NSU, IUB, AIUB, AUST, DU, and BUET felt that they had environmental problems for having IT facilities in the respective libraries.

Figure 6: Percentage wise status of interlibrary loan and document delivery system
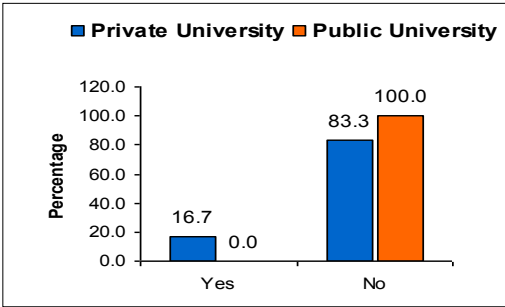
As the figure 6 shows that 100% public university libraries (surveyed) did not have any interlibrary loan and document

291

delivery system; on the other hand, only 16.7% private university libraries maintained interlibrary loan and document delivery system and 83.3% private libraries said they did not have that system. But all universities agreed that system should be set up in the respective libraries.

Figure 7: Percentage wise status of digitization programme started in the libraries
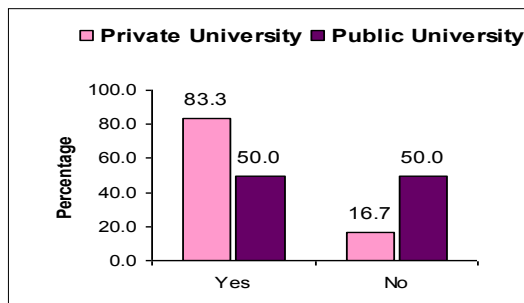
This figure 7 indicates that 83.3% private university libraries started their digitization programme and 16.7% was not able to start their digitization programme. Alternatively, 50% public university libraries started their digitization programme and rest of 50% did not start their digitization programme. Those who have not yet started their digitization programme, they agreed that they should start the programme immediately.

University library use: Users' perspective

The user level survey has been conducted to examine the present condition and future prospects of the libraries. The

user level information also provided the extent and effectiveness of the libraries in regard to user perspectives. A total of 130 users were interviewed from the following 10 universities:

01. North South University
02. Independent University, Bangladesh
03. East West University
04. BRAC University
05. American International University Bangladesh
06. Ahasanullah University of Science and Technology
07. University of Dhaka
08. Bangladesh University of Engineering and Technology
09. Jahangirnagar University
10. Bangladesh Agricultural University

All the users were asked how frequently they visited the library, availability of services they received, whether they get help from the library personnel in order to collect information and availability of national and international database in respect of the degree of usefulness. For further improvement of library services, suggestions were also sought from the users.

Selected characteristics of the users
Information on users characteristics were collected by sex and category they belong to and their area of profession.

Table 35: Status of sex of users

Sex	University				Total	
	Private University		Public University			
	Number	%	Number	%	Number	%
Male	57	73.1	39	75.0	96	73.8
Female	21	26.9	13	25.0	34	26.2
Total	78	100	52	100	130	100

This table 35 shows that the survey was made among 130 users, of which, 73.8% were male and the rest 26.2% were female.

Table 36: Characteristics of users by status

Status of respondents	University				Total	
	Private University		Public University			
	Number	%	Number	%	Number	%
Undergraduate	56	71.8	17	32.7	73	56.2
Postgraduate	11	14.1	21	40.4	32	24.6
M.Phil.			1	1.9	1	.8
Ph.D			3	5.8	3	2.3
Lecturer/Asst. Professor	6	7.7	7	13.5	13	10.0
Assoc. Professor/ Professor	3	3.8	1	1.9	4	3.1
Junior Researcher			1	1.9	1	.8
Others	2	2.6	1	1.9	3	2.3
Total	78	100	52	100	130	100

The above-mentioned table 36 indicates the status of respondents. Among the respondents interviewed; 56.2% were undergraduate students, 24.6% were postgraduate students, .8% were M.Phil. students, 2.3% were Ph.D. students, 10% were lecturer and assistant professor, 3.1%

were associate professor and professor, 0.8% were junior researcher, and 2.3% were others.

Table 37: Status of users' visit to the library

Indicator	University	Frequency scale											
		Always		Frequently		Occasionally		Rarely		Never		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Your institutional library	Private University	56	71.8	19	24.4	3	3.8	-	-	-	-	78	100
	Public University	36	69.2	16	30.8	-	-	-	-	-	-	52	100
Other libraries	Private University	13	16.7	10	12.8	12	15.4	17	21.8	26	33.3	78	100
	Public University	2	3.8	22	42.3	21	40.4	1	1.9	6	11.5	52	100

This table 37 shows us the frequency of visit by the users in their parent library (university) and other than parent library was collected by five scale-points, i.e. always, frequently, occasionally, rarely, and never. Table 32 presents a status of users' visit to the library. About 71.8% users of private university and 69.2% users of public university always visited their parent library, 24.4% of private university and 30.8% of public university users visited parent library frequently, and 3.8% users of private university visited parent library occasionally. On the other hands; 16.7% users of private university and 3.8% users of public university always visited other libraries, 12.8% of private university and 42.3% of public university users visited other library frequently, 15.4% users of private university and 40.4% of public university visited other libraries occasionally, 21.8% users of private university and 1.9% of public university visited other libraries rarely, whereas 33.3% users of private university and 11.5% of public university never visited other libraries.

Table 38: Status of purpose of library use by the users

Indicator	University	Frequency scale											
		Always		Frequently		Occasionally		Rarely		Never		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
To collect information for teaching purpose	Private University	26	33.3	23	29.5	9	11.5	1	1.3	19	24.4	78	100
	Public University	10	19.2	12	23.1	6	11.5	6	11.5	18	34.6	52	100
To collect information for study purpose	Private University	51	65.4	23	29.5	3	3.8	-	-	1	1.3	78	100
	Public University	32	61.5	16	30.8	2	3.8	-	-	2	3.8	52	100
To know about political situation, economic activities and social life of the country	Private University	16	20.5	15	19.2	20	25.6	11	14.1	16	20.5	78	100
	Public University	5	9.6	19	36.5	9	17.3	12	23.1	7	13.5	52	100
To check references	Private University	17	21.8	33	42.3	10	12.8	12	15.4	6	7.7	78	100
	Public University	13	25.0	10	19.2	20	38.5	5	9.6	4	7.7	52	100
For entertainment and recreation	Private University	15	19.2	18	23.1	22	28.2	9	11.5	14	17.9	78	100
	Public University	2	3.8	5	9.6	18	34.6	19	36.5	8	15.4	52	100
To gain knowledge from journals	Private University	20	25.6	24	30.8	20	25.6	11	14.1	3	3.8	78	100
	Public University	12	23.1	18	34.6	14	26.9	5	9.6	3	5.8	52	100
To work out daily problem(s) in your ongoing research	Private University	16	20.5	21	26.9	18	23.1	7	9.0	16	20.5	78	100
	Public University	5	9.6	21	40.4	10	19.2	13	25.0	3	5.8	52	100
To write article(s) i) for journals ii) for seminar / conference	Private University	14	17.9	18	23.1	7	9.0	15	19.2	24	30.8	78	100
	Public University	5	9.6	11	21.2	6	11.5	24	46.2	6	11.5	52	100
To review article(s)	Private University	15	19.2	21	26.9	11	14.1	14	17.9	17	21.8	78	100
	Public University	2	3.8	10	19.2	5	9.6	25	48.1	10	19.2	52	100
To prepare research proposal/report(s)	Private University	24	30.8	18	23.1	16	20.5	8	10.3	12	15.4	78	100
	Public University	11	21.2	15	28.8	9	17.3	10	19.2	7	13.5	52	100
To organize new design for an experiment, i.e. procedural information	Private University	9	11.5	23	29.5	21	26.9	8	10.3	17	21.8	78	100
	Public University	2	3.8	17	32.7	5	9.6	10	19.2	18	34.6	52	100
To find out statistical data	Private University	15	19.2	16	20.5	24	30.8	8	10.3	15	19.2	78	100
	Public University	4	7.7	18	34.6	17	32.7	5	9.6	8	15.4	52	100
Others	Private University	13	16.7	19	24.4	27	34.6	8	10.3	11	14.1	78	100
	Public University	6	11.5	3	5.8	26	50.0	1	1.9	16	30.8	52	100

The table 38 shows that the purpose of use of library by the users. Users used library for various reasons. There were 13 indicators used to determine the purpose of library use; such as teaching purpose, study purpose, to learn economic activities of the country, to check references, for recreation, to gain knowledge from journals, to work out daily problems, to write articles, to

review articles, to prepare research proposals, to organize new design for an experiment, to find out statistical data and other purposes. It has been noticed from the table that highest number of users, i.e. 65.4% users of private university and 61.5% users of public university always visited library for study purpose. Alternatively, 1.3% users of private university and 11.5% users of public university (lowest number) visited library rarely for teaching purpose. This table helps us to determine the specific reason of visiting library by users.

Table 39: Distribution of libraries by status of allotment of time to research or study in a week

University	Allotment of time to research/study in a week										Total	
	1-20 hours		21-40 hours		41-60 hours		61-80 hours		81-100 hours			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
NSU	9	69.2	1	7.7	1	7.7	-	-	2	5.2	13	100.0
IUB	9	69.2	-	-	4	30.8	-	-	-	-	13	100.0
EWU	9	69.2	3	23.1	1	7.7	-	-	-	-	13	100.0
BU	4	30.8	5	38.5	4	30.8	-	-	-	-	13	100.0
AIUB	8	61.5	2	15.4	2	15.4	1	7.7	-	-	13	100.0
AUST	9	69.2	3	23.1	1	7.7	-	-	-	-	13	100.0
DU	2	15.4	5	38.5	2	15.4	4	30.8	-	-	13	100.0
BUET	7	53.8	6	46.2			-	-	-	-	13	100.0
JU	1	7.7	6	46.2	6	46.2	-	-	-	-	13	100.0
BAU	7	53.8	5	38.5	1	7.7	-	-	-	-	13	100.0

This table 39 presents allotment of time to research or study in a week by users of different libraries. It has been observed in the above-mentioned table that 69.2% users of

NSU, IUB, EWU, and AUST spent 1-20 hours time and 53.8% users of BUET and BAU spent the same amount of time in a week in the library. About 34% library users spent 21-40 hours and 15.6% users spent 41-60 hours time in a week in the library. Only 7.7% users used 61-80 hours time and 2.6% users used 81-100 hours time in a week in the library. It was understood that users of private university spent more time in the library rather than users of public university.

Figure 8: Percentage wise status of meeting of information needs by the users
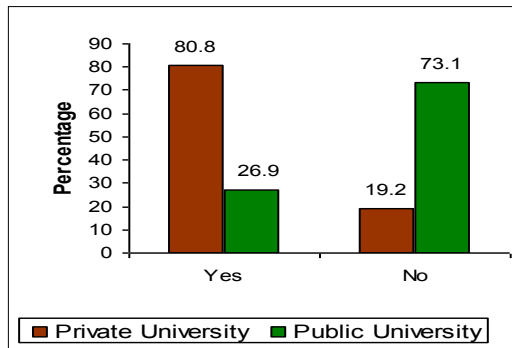
Percentage wise status of meeting of information needs by the users is discussed in the figure 8 mentioned above. It shows 80.8% users of private university and 26.9% users of public university libraries stated that most of the information they needed were able to be provided by the respective university library. In contrary, 19.2% users of private university and 73.1% users of public university

libraries admitted that university libraries were not able to provide the information they needed by the respective university.

Figure 9: Percentage wise status of users on awareness of holding journals received by the respective library
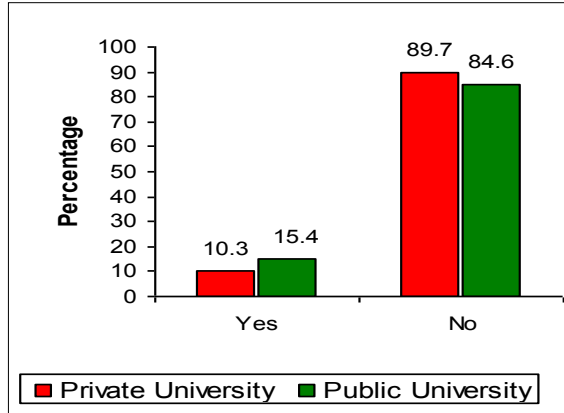
The above figure 9 shows that only 10.3% users of private university library knew the number of journals received by the respective library and 15.4% users of public university library knew the number of journals received by the respective library. On the other hand, 89.7% users of private university library and 84.6% user of public university library did not know the number of journals received by the respective university library. This figure reflected that users of public university are more serious than private university. But at the same time it is also true that research work of any university is not that much significant.

Table 40: Status of users' satisfaction in using journals for research work

	University				Total	
	Private University		Public University			
	No.	%	No.	%	No.	%
Yes	8	100	7	87.5	15	93.8
No	-	-	1	12.5	1	6.3
Total	8	100	8	100	16	100

Those who knew the number of journals received by their library said that these are sufficient for their research work (table 40). 100% users of private university and 87.5% users of public university opined that they had adequate journals in their respective library for their research work.

Table 41: Distribution of libraries by percentage wise status of research work was fulfilled by the journals received in libraries

University	01-20%		21-40%		41-60%		61-80%	
	No.	%	No.	%	No.	%	No.	%
NSU	-	-	4	40.0	4	40.0	2	20.0
IUB	3	25.0	2	16.7	5	41.7	2	16.7
EWU	3	23.1	5	38.5	5	38.5	-	-
BU	2	18.2	4	36.4	3	27.3	2	18.2
AIUB	4	36.4	5	45.5	2	18.2	-	-
AUST	9	69.2	2	15.4	2	15.4	-	-
DU	5	38.5	7	53.8	-	-	1	7.7
BUET	-	-	5	45.5	4	36.4	2	18.2
JU	5	45.5	2	18.2	3	27.3	1	9.1
BAU	2	20.0	7	70.0	1	10.0	-	-
Total	33	28.7	43	37.4	29	25.2	10	8.7

This table 41 presents the percentage of research work was fulfilled by users of the respective university. 21-40% research work was fulfilled by an impressive number of users of private and public university both. 01-20% and 41-60% research work was accomplished by a good number of users (30%) of private university and same amount of research work was done by 26.7% and 17.8% users respectively of public university.

301

Table 42: Distribution of libraries by percentage wise status of users on awareness of online databases subscribed by the respective library

University	Yes		No	
	No.	%	No.	%
NSU	6	46.2	7	53.8
IUB	5	38.5	8	61.5
EWU	5	38.5	8	61.5
BU	11	84.6	2	15.4
AIUB	11	84.6	2	15.4
AUST	3	23.1	10	76.9
DU	10	76.9	3	23.1
BUET	8	61.5	5	38.5
JU	7	53.8	6	46.2
BAU	13	100.0		
Total	86	66.2	44	33.8

This table 42 presents percentage wise status of users on awareness of holding online databases received by the library mentioned above. If we look at the table, it is found that a very good number of users of BU, AIUB, BAU, JU, BUET and DU, knew about online databases subscribed by their respective library. Alternatively, most of the users of IUB, EWU, and AUST, did not know about online databases of their relevant library. As it has been observed by the author that public university libraries mentioned above, BU, and AIUB had a few subscription to online databases, which might be the reason for awareness of the

said databases by the users. AUST did not have any internet connection to the library, so obviously most of the users of AUST did not know anything about the databases. On the other hand, IUB, EWU and NSU, maintained a good number of online databases; the users of these universities also used them, so it was speculated that they might forget about online databases maintained by them.

Figure 10: Percentage wise status of users on awareness of international online databases subscribed by the respective library
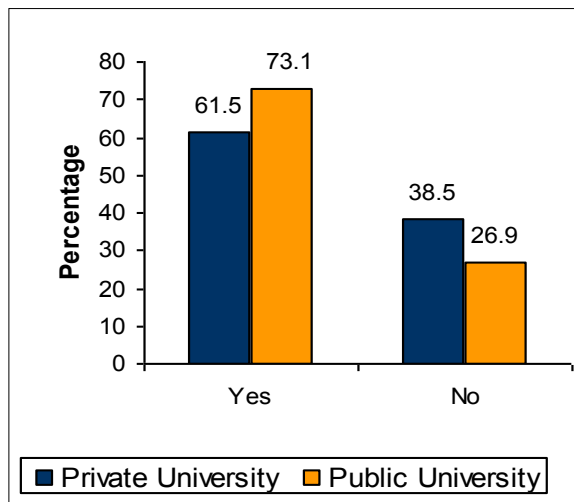
This figure 10 shows that 73.1% users of public university and 61.5% users of private university library knew the number of international online databases subscribed by the library. Similarly, 38.5% users of private university and 26.9% users of public university were not aware of the

international online databases subscribed by the library. Of which, 20.8% users of private university and 21.1% users of public university opined that these databases were sufficient for their research work. On the other hand, most of the users (about 79%) of private and public both universities thought those databases were not enough for their research purpose.

Figure 11: Percentage wise status of users on international online databases that should be added to current subscription
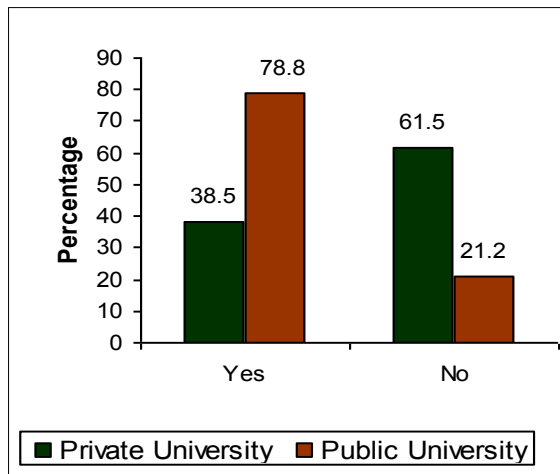
The figure 11 shows that 38.5% users of private university and 78.8% users of public university gave opinion on international online databases in favour of adding more databases to the current subscription in their respective library, such as Emerald, IEEE, Proquest, Web of Science, Science Direct, etc.

Table 43: Distribution of libraries by percentage wise status of users' satisfaction with the arrangement of resources in the respective library

University	Yes		No	
	No.	%	No.	%
NSU	10	76.9	3	23.1
IUB	10	76.9	3	23.1
EWU	11	84.6	2	15.4
BU	13	100.0	-	-
AIUB	13	100.0	-	-
AUST	2	15.4	11	84.6
DU	5	38.5	8	61.5
BUET	9	69.2	4	30.8
JU	1	7.7	12	92.3
BAU	11	84.6	2	15.4
Total	85	65.4	45	34.6

This table 43 reflects that 75.6% users of private university and 50.0% users of public university satisfied with the current arrangement of resources they had in their respective library. On the contrary, 24.4% users of private university and 50.0% users of public university were not satisfied with the current arrangement of resources they had.

Table 44: Distribution of libraries by percentage wise status of reading room space in the respective library

University	Yes		No	
	No.	%	No.	%
NSU	5	38.5	8	61.5
IUB	9	69.2	4	30.8
EWU	4	30.8	9	69.2
BU	3	23.1	10	76.9
AIUB	2	15.4	11	84.6
AUST	10	76.9	3	23.1
DU	9	69.2	4	30.8
BUET	7	53.8	6	46.2
JU	9	69.2	4	30.8
BAU	11	84.6	2	15.4
Total	69	53.1	61	46.9

This table 44 presents that 42.3% users of private university and 69.2% users of public university agreed that they had enough reading room space in their respective library. On the contrary, 57.7% users of private university and 30.8% users of public university said that the reading room space they had were not enough in their respective library. It is clearly explained that private universities were suffering from space constraints rather than the public universities.

Figure 12: Percentage wise status of reading room facilities in the respective library
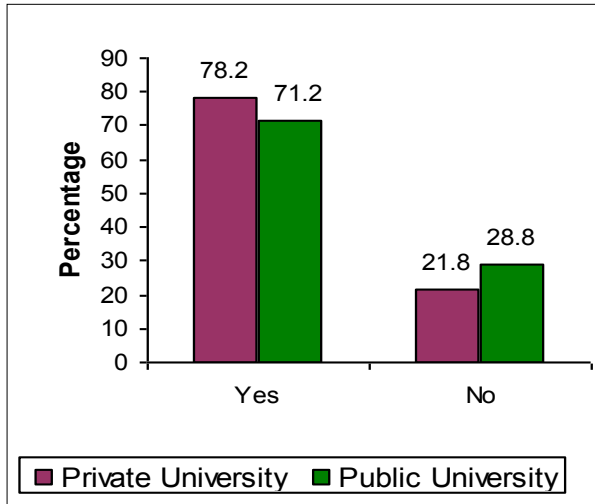
This figure 12 reflects that 78.2% users of private university and 71.2% users of public university libraries said the reading room facilities they had, these are agreeable to them. On the contrary, 21.8% users of private university and 28.8% users of public university were not satisfied with the current facilities of reading room they had in the library.

Table 45: Status of services rendered by private and public university library

Types of services	University				Total	
	Private University		Public University			
	No.	%	No.	%	No.	%
Book lending services	70	89.7	44	84.6	114	87.7
Reference services	69	88.5	40	76.9	109	83.8
Referral services	31	39.7	14	26.9	45	34.6
Photocopy services	59	75.6	46	88.5	105	80.8
On-line new arrivals services	49	62.8	20	38.5	69	53.1
On-line database retrieval	40	51.3	24	46.2	64	49.2
Distribution of current content	27	34.6	18	34.6	45	34.6
Literature searches	42	53.8	25	48.1	67	51.5
Newsletter (Information bulletin)	51	65.4	14	26.9	65	50.0
Translation services	16	20.5	4	7.7	20	15.4
Inter-library loan	13	16.7	2	3.8	15	11.5
Newspapers clippings	50	64.1	30	57.7	80	61.5
Abstracting services	6	7.7	4	7.7	10	7.7
Indexing services	18	23.1	15	28.8	33	25.4
SDI services	2	2.6	13	25.0	15	11.5
Guidance services	19	24.4	15	28.8	34	26.2
Students counseling services	24	30.8	7	13.5	31	23.8

The table 45 shows different types of services provided by public and private university libraries. A comparative picture has been shown in the above-mentioned table. Among the services, book lending services were provided to the highest number of users (87.7%) of public and private university library both. On the other hand, abstracting services were rendered to the lowest number of users (7.7%) of public and private university library both. More than 80% users were very much inclined to receive

book lending, reference and photocopy services from the respective library. At the same time, less than 20% users of public and private university were interested in translation, inter-library loan, abstracting, and SDI services from the respective library.

Figure 13: Percentage wise status of users' satisfaction on library services rendered by public and private university libraries
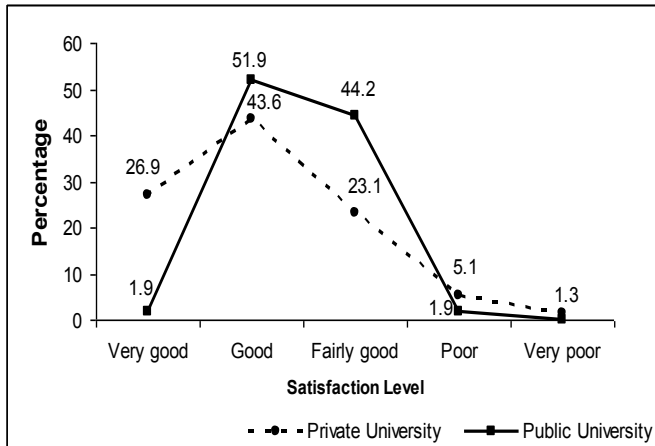
This figure 13 shows the level of users' satisfaction on library services rendered by public and private university both. 26.9% users of private university said library services were very good, where as only 1.9% users of public university stated that the services were very good. 43.6% users of private university and 51.9% users of public university said that the services rendered by the respective university were good. 23.1% users of private university and 44.2% users of public university stated that

the services were fairly good. It has been remarked by 5.1% users of private university and 1.9% users of public university that the services were poor. 1.3% users of private university observed the services were very poor.

Figure 14: Status of additional services needed to be provided by the library
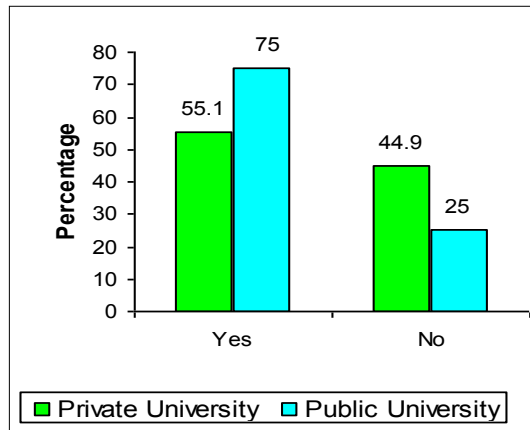
This figure 14 explained about the additional services needed to be provided by the library. 75% users of public university and 55.1% users of private university library suggested that they need and expect additional services from the library.

Table 46: Status of additional services expected by users according to the priority

Types of additional services	University				Total	
	Private University		Public University			
	No.	%	No.	%	No.	%
Online services	14	43.8	23	85.2	37	62.7
Collect low music system	1	3.1	-	-	1	1.7
Collect more original copy books	15	46.9	-	-	15	25.4
Collect more journals	4	12.5	3	11.1	7	11.9
Collect recent addition books	10	31.3	-	-	10	16.9
Need more rooms/space	8	25.0	2	7.4	10	16.9
Photocopy services	7	21.9	5	18.5	12	20.3
More reference books	3	9.4	2	7.4	5	8.5
Snack corner	2	6.3	-	-	2	3.4
Re-arrange management system	-	-	3	11.1	3	5.1
Books lending services	6	18.8	3	11.1	9	15.3

If we look at the table 46, it is found that 43.8% users of private university and 85.2% users of public university wanted to have more online services from the library. It was reflected that users desired to have more online services from the library besides other library services.

Table 47: Status of recommendations by users about databases and online facilities should be added with the existing facilities of the respective library

Databases and online facilities to be added with the existing facilities of the library	University				Total	
	Private University		Public University			
	No.	%	No.	%	No.	%
Science & technology databases	58	75.3	33	71.7	91	74.0
Consortium for sharing databases with reduced cost	39	50.6	26	56.5	65	52.8
Networking facilities which may be developed or strengthened	62	80.5	41	89.1	103	83.7
IT based acquisition systems	56	72.7	37	80.4	93	75.6
Full utilization of electronic media for transfer of information	61	79.2	38	82.6	99	80.5
Increased coordination among various institutions	56	72.7	35	76.1	91	74.0

This table 47 shows that a few recommendations were made by users for addition of some databases, online facilities, and institutional coordination. 75.3% users of private university and 71.7% users of public university recommended adding science and technology databases with the existing databases. More than 50% users of public and private university both requested to join consortium for sharing databases at a reduced cost. 80.5% users of private university and 89.1% users of public university suggested strengthening or developing network facilities of libraries. It has been observed that IT based acquisition system of our universities is weak in library automation

process. For that 72.7% users of private university and 80.4% users of public university suggested to develop IT based acquisition system in the libraries. About 80% users of both universities advised to utilize of electronic media for the transfer of information. Similarly, 74.0% users of public and private universities recommended increasing coordination among various institutions.

Chapter VIII

A MODEL PLAN

Introduction

Information is the prime resources for any kind of development of any country. The library and information centres are primarily responsible to meet information needs of users (Mannan, 1997:209). The academic institutes largely depend on libraries for their information requirements. Libraries play a vital role in supporting the academic and research activities and providing information services to the academic community of the respective institutions. Libraries also provide an important link in their quest for information. The higher educational institutes' library occupies the central place in meeting the diverse and growing needs of educational programme at the students' and researchers' levels. Without libraries no higher educational institutes can run their academic activities. Libraries' participation in the educational mission by providing appropriate information services accelerates the progress of learning and research process (Malwad, 1995:100).

It has been observed that the university libraries and its information services are currently available in Bangladesh are not satisfactory. In view of that an attempt has been made to propose a suitable plan for establishing modern

university libraries in Bangladesh in terms of infrastructural facilities, economic change, social developments, technological innovations, environmental impacts, teaching and learning (especially in relation to e-learning, ICT, accessibility and working with academic departments), research methodology, effective use of ICT and e-learning, widening participation and improving the students' experience, staff development, knowledge transfer, resource planning, quality issues, and overseas links (McNicol, 2005:504).

The proposed model plan of a private university library may contain 5,000 students, 200 faculty members, and 100 staff members. The plan may include the following components for making a modern private university library in Bangladesh:

- **Planning and Designing**
- **Creating Facilities**
- **Activities**
- **Services**
- **Administration**
- **Automation**
- **Digitization Programme and Institutional Repository (IR)**
- **Resource sharing**
- **Facilities and Services for Users with Disabilities**

Figure 15: Different components of proposed model library

Components of Proposed Model Library

- Planning and Designing
- Creating Facilities
- Activities
- Services
- Administration
- Automation
- Digitization programme and Institutional Repository (IR)
- Resource Sharing
- Facilities and Service for Users with Disabilities
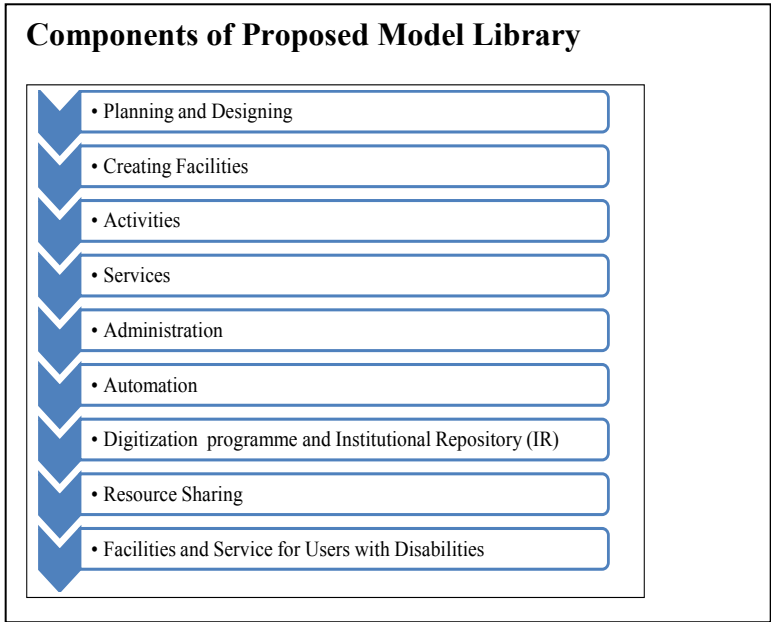
Planning and Designing

It has been observed that lack of space is the greatest challenge facing by organizations and libraries, particularly, in Bangladesh where number of population is very high and the required living land is very limited. Everyone is running out of it. The information explosion, budget restrictions, the high cost of space, and expansion of collection have placed considerable burden on libraries, specially, on higher learning institute libraries.

A noted European architect, H. Faulkner-Brown (1987:17-45), conducted feasibility studies on space and identified ten criteria to be considered for new Library. He says that a library should be:

1. *Flexible* – with layout, structure, and services which are easy to adapt;
2. *Compact* – for ease of movement of readers, staff, and books;
3. *Accessible* – from the exterior into the building and from the entrance to all parts of the   building, with an easy, comprehensive plan needing minimum supplementary directions;
4. *Extendible* – to permit future growth with minimum disruption;
5. *Varied* – in its provision of reader spaces, to give wide freedom of choice;
6. *Organized* – to impose maximum confrontation between books and readers;
7. *Comfortable* – to promote efficiency of use;
8. *Constant in environment* – for the preservation of library materials;
9. *Secure* – to control user behavior and loss of books; and
10. *Economical* – to be built and maintained with minimum staff and financial resources.

Designing a library that is attractive, cost-effective and user friendly involves a number of things for planning considerations. According to Roberta Freifeld (1991:5), the following factors may be considered:

1. *Beginning* – what and how to measure the collection and the equipment in which it is housed.
2. *Evaluating the building* – considering floors, walls, ceilings, windows, columns or pillars, electrical systems, air-handling systems, and how they relate to the design of the library.
3. *Blueprints and floor plans* – to consider when laying out a library and how to use blueprints and floor plans in the design process.
4. *Equipment and furniture* – what types of shelving and furniture are best for the collection needs.
5. *Ergonomics* – the human factor; how work environments can affect productivity and morale.
6. *Technology* – what new technological products are available and how they affect the library design.
7. *Resource sharing* – how to get the most resources with the least amount of space.

Beginning

Before we calculate correctly that how much space we will need, we must know how much collection of housing we have, as well as how much and what types of materials need to be accommodated. Measuring the collection housing will allow us to determine how much space the equipment actually occupies on the floor. For measuring purpose, we may measure things such as recording the height, width, and depth of all shelving and the number of rows per shelving unit. We may consider existing shelving will often be moved from one location to another location. We may count all equipment, cabinets, pieces of furniture,

vertical files, newspaper files, cases for photographs, blueprints, microforms, film, CD-ROMs, video-tapes, and periodicals display. Particular furniture may be made in detail for planning purpose. Exact collection and measurements provide information for justifying the need for increased space and equipment. These measurements will help us to determine what will fit where and help us to locate the collection on floor plans before and during a move, renovation, or redesign/ reconfiguration. Determining the space required for future collection growth will enable the new space configuration to work. To determine how fast the collection is growing, identify the total number of items added to the collection during the past year. Ensure greater accuracy by identifying the total number of items added during the past five years. Then average that number, which will help to make provision for future expansion (Freifeld, 1991:7-12).

Evaluating the building

According to Freifeld (1991:15-22), evaluating a building for its use or partial use as a library is becoming more and more critical for librarians and architects. A proper evaluation of the prospective library space will cover functional/ technical and aesthetic considerations. Here we will describe functional/ technical issues as floor assessment (especially floor load capacity), walls, ceilings, windows, columns, pillars, electrical system, ventilation, and fire safety considerations.

To understand **floor load** librarian needs to be aware of the concepts on *dead load and live load.* The weight of the building which does not move and always remains the same is called dead load. On the other hand, the live load is the weight of the items or people that move or can be moved around the building. It includes books, equipment, furniture, fixtures, and people. During the calculation of the load, the weight of the people must be separated from other components of the live load.

Load capacity of the floor is a major issue when **high-density mobile shelving** is used in the library. Since this equipment, for mobile shelving system, can accommodate nearly double the volume of a conventional shelving system in the same area, the floor must be able to hold twice the load. Still now there is no mobile shelving system in any library of Bangladesh. If the library building is not made to hold twice the load of each floor in Bangladesh, this mobile shelving system could be avoided rather to introduce the normal shelving system. Bolstering allows the building to support the additional weight. Major components of the building's superstructure are the lintels, girders and beams that bind the floors and wall together. The vertical columns of the building need to be able to carry this added weight. A structural engineer may be consulted for more information on these topics, if required.

During evaluation, consider the current and expected future use of **walls and wall space.** Some walls are moveable and some are solid. Ceiling height in users' areas should be ten feet, while eight-feet-high ceilings work in staff areas. High ceilings mean greater noise level, as well as increased heating and cooling costs. Low ceilings have disadvantages, ceilings lower than eight feet limit shelving options. Lighting brightness may also become a problem.

Windows disrupt continuous wall space and affect a building's lighting and heating requirements. On the human side, windows enhance the environmental and provide more comfortable space for patrons. It is better include locations and characteristics of skylights and plate-glass walls.

Columns and pillars serve a variety of functions; they may be load-bearing structural support, a decoration, or an instrument for wiring and air-handling systems. The location of columns affects lay out, space, visibility, and security.

Electrical power affects space lay out and configuration. Electrical wiring, circuits, switch locations, plugs, outlets, electrical closets, location of generators, and so on are very important for planning library building. All these provisions should be made available during planning as

well as construction of the building. Professional electrical engineers may be consulted for proper planning.

We must consider **lighting / air-handling** relationships in the space planning process. Many lighting fixtures can be installed as part of the heating, ventilating, and air-conditioning system. Air may circulate through special holes in or around the light fixtures. Considering all heating, ventilating, and air-conditioning system; architect seriously should think about the lighting system of the library.

National codes of **fire safety** may be adopted during planning of any library building. The library should have more than one entry and exit. One is for regular use and another one is for occasional use.

Blueprints and floor plans

Freifeld says (1991:28-40) that Library is an equipment - and furniture-concentrated. To maximize efficiency and effectiveness, the library should be attractive, usable, and comfortable. Five major factors are involved in planning a library. They are:

1. Collection space for book stacks, file equipment, or shelving, newspaper and journal storage and display equipment.

2. Staff space for work stations, technical processing areas, reserve section, reference desks, and circulation desk.
3. User space for reviewing- area carrels, chairs, lounges, microfilm/microfiche reader, printer work stations and chairs.
4. Internal circulation and traffic flow within the library, which translates into easy access to materials, staff, equipment and furniture; and
5. Space for support functions, such as photocopy machines and mail handling.

Collection of space is the top priority. The collection of reading materials is the heart of any library and must be given sufficient space for current requirements, as well as future growth and expansion.

It is essential that the space planner must consider the building structure, floor load capacity, available usable space, non-assignable space, and individual user and staff needs and requirements (Freifeld, 1991:24-30).

Cohen says (1979:66-67), non-assignable space is the space that can't be used for library purposes – corridors, stairwells, elevators, rest rooms, mechanical rooms, and such. Non-assignable space also implies non-usable corners. It is better to keep not more than 25% of non-assignable space in the library. Too much non-assignable space interprets into lack of control and may also require additional staff members – besides excessive walking.

Space requirements for staff areas are difficult to simplify. Some studies indicate that fifty to sixty square feet for each professional employee (entry level officer of the Library) is adequate. It provides a desk, chair, file cabinet, and aisle space. However, because of the high space costs of Bangladesh, actual in-use standards may be as low as thirty square feet per clerical worker. Space requirement increases as we go for managerial ladder. For example, a supervisor (section head, assistant librarian level) would have 80 square feet, department manager (deputy librarian level) 100-120 square feet, and chief librarian/ library director, 200-230 square feet.

Staff members' workstations must be placed in such a way, so that desks, file cabinets, chairs, and book trolleys can be run correctly on each floor. We must make sure to allocate space for office supplies and special functions such as binding. We also should remember to allow space for bathrooms, lounges, a kitchen, a circulation desk, book trolleys, and other special purposes.

Twenty percent seating arrangement should be made on the basis of total enrolled in the University. The type and size of chairs have an impact on the amount of space required. Obviously, armchairs take up more space than chairs without arms. If the university does not have enough space, too much working space can be a serious problem. Be sure to allow enough space, but should not misuse it.

Heavy traffic areas or areas housing the book collection (bookcases/stacks) should be designed as squares or rectangles because these shapes are flexible and easiest to work with. Placing stairs and elevators next to each other is an effective use of space. Stairs and elevators should relate in multilevel libraries. In multilevel library, the main entrance/exit should be located on the first floor in the most important user area. The first floor should contain the most important user services.

Accessibility is important for all libraries. If a library is not accessible or delivery service is not efficient, there is no significance of having library in the university. Private university library should have open access system to shelves, so the students will be able to get direct access to the shelves as well as to desired materials.

Equipment and furniture

Needs and usage of academic library users, particularly for students and faculty members, should be considered when selecting furniture for the private university library. Furniture should be made available for staff members also. Furniture must be evaluated considering durability, flexibility, comfort, and efficiency, and for its future use. **Chairs** are manufactured in materials such as wood, plastic, metal, or a combination of materials. Wood chairs are the most durable and comfortable furniture. Reading chairs should be used for reading areas, executive chairs

and office chairs should be used for staff members' room and computer chairs for computer tables. A **table** must be measured, marked, and placed carefully on a layout of the library. Each table should have a furniture record that notes its condition, composition, shape, manufacturer, size and seating capacity. Size of the reading tables may be varied because of locations inside the library. In that case, librarian will decide about measurement of reading tables. Chief executive's table, other executives' tables, computer tables and side desks of each should maintain a universal standard as per ranking of officers. Printers can be placed in computer table. **Carrels,** sometimes, are more functional and appropriate than tables. It takes less space and very useful for faculty members and researchers. Carrels can be wired to accommodate all of these activities, such as it can have individual lights, telephones, and overhead shelves for books. A carrel's surface should be at least twenty-four inches deep by thirty-six inches wide. Staff will use **desks** for technical services, circulation, and reference services. University library should use standard side desks and secretarial desks for staff those perform clerical jobs. Wooden desks should be purchased for reference, circulation and executive personnel. If wooden desks are used heavily, they should have high-pressure laminate tops or weighty glass covers. A circulation desk should manufacture with having all provision of circulation functions and services. The circulation desk should be protected with a laminate or heavy glass or other resistant material. **Workstations**

should be made available in the library. Library collection should be housed in variety of equipment. **Equipment** should be chosen for its serviceability and suitability for the materials to be housed. All equipment such as photocopier, colour photocopier, electric typewriter, PCs, CPUs, keyboards, mouse, UPS, laptop, image scanner, server, laser printers, colour printer, card printer, telephone, fax, e-fax, hub, several terminals for OPAC search, multimedia, web cam, RFID technology, and Wi-fi device, should be made available to accommodate all the materials that library has. There are many **shelving** options for libraries, selection of equipment depends on the use of the materials on the shelves. Standard wooden and steel shelving should be used for the materials to which patrons have access. Wooden shelves may be most expensive rather steel shelves are less expensive. Shelves can also be purchased with built-in lighting. Open access shelving system is better than closed access system. Patrons may have their own choice in open access system. But in closed access system patrons may not have their own choice. Since most of the libraries are moving towards automated system so there should not be any provision for catalogue cabinet (Freifeld, 1991:41-75).

Ergonomics

Ergonomics is the relationship of humans to their work environment. It involves reconciling the essential factors in an office to produce comfortable and productive work

environment. There are some components of ergonomics that include system analysis, job analysis, time and work studies, the proper tools and hardware for the staff members, human physiology; behavioral responses of staff to their work environments, and external factors that affect staff both physically and psychologically, i.e. light, sound, colour, shape, décor, and appearance (Freifeld, 1991:77). Ergonomics also deals with how people interact with machines, such as keyboard arrangement, printer location, and type of computer screen affect productivity and job satisfaction of staff.

Technology

As information technology advances and expands its applications, dependence of the university libraries is increasing on technologically based resources and services. IT based library services should be made available for its users because of the convenience, durability, faster and integrity. Electronic university library must be planned differently to accommodate state-of-art library services. Electronic-based library resources require different kinds and amounts of space than their paper counterparts. Information can be stored on this media than on paper. The initial cost for creating the electronic library is high. But, cost savings are realized in terms of limited space use, the time spend in organizing library materials, and the time use in processing paper-based acquisition, in subscribing journals, indexes and

abstracts, periodicals, and other bulk information (Freifeld, 1991:93-95).

Considering space, technologically advanced university library should include the location of computer hardware, namely, terminals, modems, printers, plotters, server, and many other peripherals. Also locate storage space for the supplies, reading materials, directories, and telecommunications equipment.

The rapid development and introduction of information technologies, libraries and information services have widely been expected to lead to sweeping changes in ways that libraries are organized and managed (De Klerk, 1989). The change has been both rapid and revolutionary, and the future will bring even more rapid and radical changes in gathering, processing and disseminating. J. Hartley and others (1990) stated that recently, however, information technologies have become widely available. Microcomputers, word processors, electronic mail, facsimile transmission, satellite communication, laser, digital disc, etc. are developed to coup with the large demand of information seekers. However, the countries of the developing world, including Bangladesh, are still hesitating in some cases to adopt these new technologies in their libraries and information systems due to limitation of budgets and skilled human resources. At the same time this is also true that currently there are many libraries in Bangladesh, particularly, some of the topmost private

university libraries are very much willing to adopt the new IT system for providing smooth and faster services as well as management of their respective libraries. The university libraries which have not yet introduced any IT system; these libraries should, immediately, be introduced and installed with IT facilities and systems by which they can provide faster and better library services.

Access, communication and transmission of information are the key elements of information dissemination. Considering the role of IT, the developments of communication technology have made it possible now to transmit information from one corner of the earth to other at the speed of light. A number of communication networks that extend to all parts of the world have come into existence. Satellite communication technology allows millions of people to keep in touch with each other even though they are geographically dispersed over distances of thousands of kilometers. Recently developments in technology have resulted in great communication networks and globally flooding of data communications. Data communications is simply the collection and distribution of data in digital form electronically from one location to another. Data is transmitted from computers to terminals and even to other computers. Use of data communication in computer and data processing systems is growing rapidly in the field of human knowledge and all spheres of Research and Development (R & D) in socio-scientific and technological aspects (Sattar, 1997:128).

Library cooperation

Library cooperation is one of the important factors to provide library services to the users at the right time. So, cooperation among libraries and participation in library and information networks and consortia enables libraries to expand their collections without allocating additional space. The appeal of the network approach is enhanced now by electronic technology. The electronic library is a fact of life. University library services are dependent on the technological support provided by computers, telecommunication systems, networking system, micrographic equipment and audio-visual devices. This technology is the basis of improved networks and resource sharing programs which should be made available in university libraries. Networking has several advantages, i.e. timely access to a greater base of information for organization employees or other library patrons, and significant savings in acquisitions, administrative overhead, and work hours spent maintaining, sorting, and disposing of, and storing the collection. There are two kinds of networks, one is internal and another one is external (Freifeld, 1991:107). Most of the public university libraries and top most private university libraries in Bangladesh have sizeable collections in their fields benefit from participation in regional and national databases.

Collections are shared through existing interlibrary loan (ILL) programmes or through the creation of interlibrary loan projects. The growing information technology has expanded the options that the libraries have for sharing information resources. The potential of ILL programme is now being realized because of dramatic improvements of reading materials available in digital form and the development of information technology for information transfer. Several new technologies have been developed and tested in library resource sharing programme. Some of these technologies have greater potential for the immediate future than others, such as telefacsimile (fax), electronic mail (email), Local Area Networks (LAN) and consortia. Email, LAN, and consortia play an important role in distributing and sharing resources among the respective libraries.

There was no library consortium in Bangladesh before 2007. In the past, UGC had taken many initiatives for library cooperation for the benefits of universities. Since 1980, there have been a number of vain attempts by UGC for library cooperation but UGC could not succeed in any attempt. In 2006, an initiative has been taken by the University Grants Commission (UGC) of Bangladesh to form a Digital Resources Consortium for university libraries in Bangladesh for sharing integrated library resources including e-resources and computer databases. A 4-member committee has been assigned at UGC to draft a concept paper on forming consortium in Bangladesh.

The implementation of this initiative will greatly help solving in accessing and using information resources, in higher education and research institutions in Bangladesh (Uddin, 2006:490-3).

In 2007, one consortium formed in Bangladesh is named Bangladesh INASP-PERI Consortium (BIPC) by the participation of major public universities, private universities and a few research institutions, which is coordinated by Bangladesh Academy of Sciences (BAS). Members of this consortium are enjoying benefit through the use of the same. No university library can fulfill their services without any cooperation of other libraries.

Creating facilities

In the 21st century library and information institutions are going through a transition and radical change. In the last century the total traditional library concept has been changed with a challenging shifting process from traditional library to IT based modern library. The innovation of numerous amazing technologies and the advancement in the field of information and communication technology forced library professionals to shift the traditional library concept to modern one. Once the library was considered as the store house of books, but now it has changed its dimension and accommodated whole knowledge. The new view is to make library more than an institution, user oriented and user friendly. All

types of libraries and information centres are trying to adopt all possible measures including installation of new technologies, introduction of various new services and improving both of interior and exterior designs and accommodating rooms for all kinds of flexibilities.

All over the world thousands of libraries and information centers are initiating various programmes to cope with the changing trends of information needs. They are trying to accommodate all possible facilities and services. Various types of libraries are taking steps according to their purposes respectively. The libraries are considering their target on users, communities, various levels of users, characteristics of information need and partners/patrons.

Facilities to be considered for university library

A university library should orient various types of facilities for its users' community. Total library system including its resources (whatever the form: physical or electronic), services, skills of staff, infrastructural environments, furniture, ICT environment etc. can be considered the following as library facilities:

- Infrastructural facilities
- Information Communication Technological (ICT) facilities
- Environmental facilities

Figure 16: Facilities of proposed model library

Facilities of proposed model library
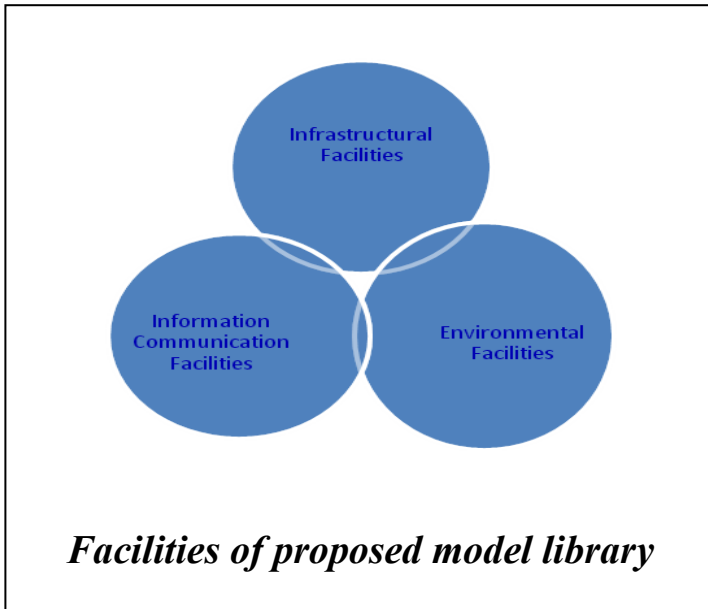
The above-mentioned categories are described below-

Infrastructural Facilities

The library should have its own building and should create all types of facilities for providing various services to the users' community. With the view to ensure the highest level of quality services and facilities all possible infrastructural installation is must. The infrastructural facilities for the university library are described below.

- Library should have separate building, reading room, study space, quiet study room, group study room, discussion room, separate working space for staff

members according to hierarchy, pigeon-hole area, supply of safe drinking water for users, presentation and meeting room, new arrival display area, special sitting arrangements for faculty members, separate washroom for male and female, separate washroom for staff members, whole library should be air-conditioned and should have with plenty of light, several fire extinguishers and first aid box, storage area for back issues of periodicals, installation of CCTV to reduce the pilferage, etc.

- All kind of furniture such as circulation desk, bookshelf area, book shelves, file cabinets, book trolleys, CD and DVD cabinets, study carrels, conference tables, study tables, chairs for users, news clipping section, reference area, newspapers corner, liberation war corner (bookshelf area for special purpose), maps and atlases corner, new arrivals display board, journals shelf area, etc.

Information Communication Technological (ICT) facilities

All library facilities, of whatever size, will need to incorporate ICT and online services. For providing these, all kinds of technical equipment should be made available in the library to facilitate IT based library services.

- This includes photocopier, one colour photocopier, electric typewriter, IT area and server room, PCs, UPS, laptop, image scanner, server, laser printers, one colour printer, card printer, separate cyber corner for users,

Internet connection with sufficient bandwidth, Local Area Network, Wide Area Network, Metropolitan Area Network, E-mail services, provision of direct dialing system from telephone in meeting the emergency requirements, fax, e-fax, hub, several terminals for OPAC search, Institutional Repository (IR) system, library website where help menu (for getting access to electronic resources of the library) should be made available, multimedia facilities, web cam, RFID system, Wi-fi and Wi-max technology, networked computer systems and workstations with Uninterruptible Power Supply, etc. Most of the ICT facilities described here are available in Bangladesh.

Hardware and software:

In the process of applying the latest ICT to traditional library management, a careful consideration during installation of hardware and software is a must. Regarding this the following things should be considered-

- Installation of latest hardware and ICT peripherals.
- Installation of an integrated online library automation system which is compatible with vernacular data, MARC21 format of bibliographical data, ISBN13 etc. international standard.

The hardware and software compatibility and up gradation are also remarkable facilities for the library.

The following applications should be made available and should be supported by IT services:

- File management and virus checker
- Information services and mail (email, web browsers)
- Microsoft office (Word/Excel/Access/PowerPoint)
- EndNote and reference manager
- Library software
- Statistics (SPSS)

To make it more user friendly, a link could be made for use of electronic resources of the library.

Security Issues:

Security issue is an important issue for any institution. As library stock-holdings are public goods, or assets of the organization concerned, they have to be protected from theft or any other destruction. Now this could be mostly done electronically. At the entrance of security gates, a special detector with electronic device should be installed which can detect books, videos or CDs, which have not been processed or issued. More and more libraries are investing in self-service computers which can 'check out' stock automatically. However, in some cases security gates send out the wrong message to users. In that case, we should prefer to find other ways of preventing theft through the use of CCTV and security staff, as well as individual security cases for books, videos, CDs and

DVDs. Security system should be handled carefully, otherwise it may create the wrong effect.

Environmental facilities

The total library environment can be categorized into two parts. One is working environment and another one is reading environment.

Working environment

Good working environment should be ensured for the greater interest of smooth operation of the library. Function wise responsibilities should be assigned to each staff member for performing their task duly. Interpersonal relationship skill among all staff members should be strengthened. All logistic support should be provided to all staff members including IT facilities. Understanding among all staff members is one of the important factors for enjoyable working environment. In order to make decent working environment, all staff should have job satisfaction. Team work acts as a vital tonic for making a good working environment.

Reading environment

In order to have a good reading environment the library should have all types of reading materials and all types of library services. It includes good-looking circulation desk

for check in and checkout, separate working space for the staff, adequate space for any user of the library, study table for eight persons, study table for four persons, individual carrel for faculty members and researchers, cyber corner for searching online journals and library database, separate periodicals display area, study chairs, open access to the shelves, and silent inside the library.

According to Dr. Alan Bundy a university library should have the following facilities-

- general print, audiovisual and electronic resources
- readers advisory and reference services
- local history resources and services
- large print books
- interlibrary loans
- support to flexible learning university students
- multicultural collections
- users' community support
- provision for the students and faculty members those who have disability
- literacy support
- study and research facilities
- internet/electronic training facilities and programs
- maintaining the local authority's website
- meeting rooms
- photocopiers and scanners
- word processing facilities
- reading groups
- generous parking provision
- Computers' support

Activities

Library activities mean what the library actually does for its users. Every university library has its own aim to provide services of reference and lending materials appropriate to the needs of the faculty members, students and staff members of the institution. These needs can vary from university to university in respect of courses offered and the research undertaken by the respective university. Section wise activities, i.e. **acquisition, processing, circulation, reference, serial, audio-visual and IT**, can be assigned for university library as follows:

Acquisition activities: acquisition is one of the most important and challenging jobs among all functions in university libraries. Here, books mean not only physical books but also electronic books. Timely delivery of books to the users is dependence on the timely acquisition of books. Keeping 120 days in hand, the acquisition programme can be made for any university library. If the concerned authority has international credit card, the acquisition formalities for books or e-books could be completed within shortest possible times, i.e. 12-15 days for print books and five days for electronic books. IT based acquisition system should be developed in all private university libraries for better, efficient, and effective acquisition system. All functions of acquisitions should be integrated with the library software. For that purpose one separate module in library software should be created where all components of acquisition

system will exist. The components of acquisition system are as follows:

Figure no. 17: Different activities of proposed model library

ACTIVITIES

Acquisition	Processing	IT-based Circulation	Reference section	Serial Section	Audiovisual and IT
Requisition form for reading materials	Stamping of books	Book Search	Literature searching	Organization of print journal	Requisition and installation of PC
Sending and receiving requisition	Making accession	Book issue and return	Digital Library	Continuation of subscription to online journals and databases	Selecting library software for automation
Compilation of list of books	Cataloguing and classification of books	Borrower status	Institutional Repository	Taking care of newspapers, newsletters and annual reports	Selecting vendor of library software
Checking of library database	Writing particular information inside the book	Fine count	Online public Access Catalogue	Sorting periodicals for binding and repairing	Support vendor to provide software
Checking prices with the publishers	Data entry in library database	User blocking	Full text article online journal services	Indexing : Readers guide to periodicals literature	Verifying the requirements of the software
Preparing preference list of vendors	Checking book information	Users clearance	Consortium	Maintenance of gift and exchange publication	Looking after automation program
Issuance of purchase order	Typing of book label	Renewal of library card	Different Online Databases	Rendering services to readers	Taking car online
Delivery of books by the vendors	Printing barcode and preparing book cards	Creation of new library card	Networking and Resource Sharing	Shelving and re-shelving of journals	Oversee the cyber corner and e-books
Receiving of books by the university library	Ready for shelving and use	Barcode generation	Indexing and Abstracting	Maintenance of news clippings	Looking after workstation
Payment of bill in favor of vendors		Uploading of photographs	Content Analysis		Maintenance of hardware of PCs
		User's hunt	Electronic alert Services		Establishment of consortium network
		Circulation report	CAS		Supervision of audio visual materials
			SDI		Looking after the WiFi system

342

Requisition form for reading materials, sending and receiving requisitions through email, compilation of list to be prepared by using library software, checking of library database to know the actual status of reading materials in the library, searching the Internet for comparing the latest bibliographical information, checking prices with the publishers' catalogue or through Internet, preparing preference list of vendors, finalizing the book list and obtaining approval from the chairperson of the library committee, issuance of purchase order, delivery of books by the vendors, and receiving of books by the university library.

The above-mentioned components of acquisition may be described as follows:

Requisition form for reading materials: All universities should have prescribed IT based or web based requisition form for reading materials by which faculty members, searchers, and staff members; and in some cases students can send their requisitions to the library. After receiving these requisitions all will be incorporated in acquisition module of library software, which will help for further and quick process.

Sending and receiving requisitions: All requestors should use the web based requisition form and after filling out that form should send to the respective library section for taking necessary actions. Deadline of receiving requisition forms by the library should be mentioned in the said forms

so the acquisition process can be handled in better approach. Alternatively requisition form may be available in Intranet network systems so the requestors can be received and the form can be easily sent through email to the respective desk of the library.

Compilation of list of books: Compilation of list of books should be started after receiving all requisition forms from the patrons' end. All requisitions should be compiled in one place, i.e. in the acquisition module of library software. List should be prepared department wise and alphabetically.

Checking of library database: Library database should be checked to know the actual status of reading materials in the library whether the reading materials have or not. Also should check to avoid the duplication of reading materials since every library has space limitations.

Searching Internet for comparing the latest bibliographical information: Bibliographical information of listed books should be checked through different search engines of Internet for verification of the said books whether these books have latest bibliographical information or not.

Checking prices with the publishers' catalogue or through Internet: Prices of listed books should be checked with the publisher's catalogue to verify the prices of vendors. If the publisher's catalogue is not available, different bibliographical list of vendors available in the Internet

should be checked for authentication of prices of the said books to be ordered in near future.

Preparing preference list of vendors: the preference list of vendors should be made on the basis of the past performance of the respective vendors to ensure the timely delivery of reading materials to the library. Performance of the vendors includes cost, timely delivery, service charges, sincerity, and good dealings with the respective library. Preference list of vendors may be incorporated with the module of the library software and that list should be prioritized during purchase of books for university library.

Finalizing the book list and obtaining approval from the chairperson of the library committee: The book list should be finalized and get approval from the chairperson of the library committee before issuing the purchase order.

Issuance of purchase order: After completing all formalities purchase order should be issued in favour of respective vendors through email. If any vendor fails to receive the purchase order through email in that case provision should be there to receive the order by hand.

Delivery of books by the vendors: Sixty days time should be given to the vendors for the supply of books to the library. If the vendor fails to supply books on time, the vendor may be given 15 days additional time to supply the said books. The delivery time may be reduced if the

shipment or delivery could be made through DHL or Fedex both have express services although these are expensive. Regular acquisition services should be made by regular mail services but emergency acquisition services could be maintained by DHL or Fedex Ltd Bangladesh. If the vendor fails again to supply these within the additional period, the scope of punishing the respective vendor should be there.

Receiving of books by the university library: Ordered books should be received by the university library as per work order. After receiving the books, those should be checked physically. Recording option of receiving books should be made available in the module of library software. Processing jobs would be started after completion of all formalities of acquisition.

Payment of bill in favour of vendors: After completion of acquisition of reading materials, bill along with the list of books should be processed through the acquisition module to the accounts section for payment. During processing of receipt, tracking of budget should be kept in proper path. So the payment of bill could be arranged duly.

Processing activities:

Some part of processing jobs should be done manually and some of them should be done automatically. The following steps are involved with processing jobs:

Physical checking of books: The first step of processing books is to check missing pages of the respective book, print quality, page quality, hard binding/paper binding, ISBN with the ordered books, etc. This process should be done manually.

Stamping of books: Different types of stamps should be put inside the book for determining the ownership of respective book; such as official round seal, receiving seal, date seal, and accession seal. These jobs should be done by manually.

Making accession: Accession should be made in the accession register in writing book information against the accession number; such as - accession date, author, title of the book, place, publisher, edition, source, price, volume, ISBN, etc. These jobs could be done manually as well data of the said book could be entered into the library database which is developed through the use of library software.

Cataloging and classification of books: After accession, subject of the said book should be determined for giving classification number of the same which makes easier to find the books from the shelves. Standard classification scheme should be followed during classification, such as Dewey Decimal Classification (DDC) scheme or Library of Congress classification scheme. Cataloguing code should be maintained duly as per Anglo American Cataloguing Rules (AACR) revised edition.

Writing particular information inside the book: Particular information of the book should be written in a particular page of that book, such as accession number, date, price, source, call no., etc. One particular page of the book should be identified for writing accession number which could be kept secret due to security of the book. Only library personnel will be acquainted with that page.

Data entry in library database: Data and book information should be entered into the database to maintain the accuracy.

Checking book information: After entering data in the database, worksheet of book information should be checked by getting a print out. If anything is found wrong, correction should be made immediately.

Typing of book labels: Call number should be typed in book label and pasted them on the spine of the book. Typing work could be done by the use of computer.

Printing barcodes and preparing book cards: Barcodes and book cards should be generated through the use of computer. Barcodes should be pasted on the title page and the back end of cover page of the respective book. Due date slip should be pasted on the inside page of back cover of the said book.

Ready for shelving and use: After completion of all processing jobs, books are forwarded for shelving and ready for use.

IT-based circulation activities

Circulation activities will be started after finishing the processing jobs. Circulation desk is the mirror of the library as it involves much work for operating library efficiently. The following components are involved with IT-based circulation jobs:

Book search - Users would be able to find their desired books by searching the library database. There are different fields of reading materials in the database to make the search easy, such as; title, author, corporate author, description, broad subject headings, key words, narrow subject headings, publisher, ISBN, supplier, call numbers, accession number and master file number of the database, etc. Search can be done by any one of the items mentioned above.

Books issue and return - Books or any other library materials could be issued to users as well as returned to the library through the mechanism of library database.

Borrower status - The database should allow users to see the information about library materials borrowed by the user. This information can be checked by the name and designation of the users, by title, date of borrowing and returning as well as the overdue.

Fine count - The library database should automatically count fine if any student fails to return the library material on time. Fine for overdue materials should be generated automatically and remind the users through email to give his/her penalty to the library.

User blocking - If any user fails to submit fine for overdue, the database should have the option to block the user's part so the user would not be able to borrow materials from the library for the next time. The database should also allow having the option to block the respective user who will be leaving the university.

Users' clearance – If any user's has any overdue, s/he will not be allowed to get the clearance from the library as the database keeps the record of the respective user. If the user does not get the clearance from the library, final payment of faculty member or staff member will not be given. Similarly no student will get his/her transcript from the registration office.

Renewal of library card – In every semester, each student has to renew the library card by showing his/her latest money receipt. Without renewing the library card, a student is not permitted to issue any reading material from the library.

Creation of new library card – To borrow library materials from the library, all students should become a member of the library. Otherwise they cannot borrow any book from

the library. For that the respective student should fill out the library card for becoming a member of the library. The information on the card is used for membership, the same information will be used to make user's profile in the library database of the respective student by which a user would be able to transact reading materials from the library.

Barcode generation – For maintaining user's profile in the database, barcode generation for each user is a very important job of the database. A unique ID number is given against each user to be read by the barcode reader.
Uploading of photograph - The database should have the option to allow showing user's photograph in his/her profile. So, the transaction could be made smoothly.

Users' hunt – User's hunting should be another option of the database to find out any user to locate as well as to contact him/her when needed. The search can be done by different fields, such as; user's name, user's Id, department, designation, user's level, and user's type, etc.

Circulation report - As the database contains all the information about circulation activities, so the circulation report could be generated by the help of the database which is very useful for library management.

Reference section

This is very important section among all the sections the university library has. This section is a hub of all activities of a library. Reference section should be organized in such a way so that all types of services could be provided to the users, such as Internet facilities, workstation, search facilities of library databases, encyclopedias, dictionaries, directories, handbooks, thesis, dissertations, reports, assignments, maps, rare books, etc. These facilities mentioned above should be made available in any reference section of any private university library. Reserved book services can be provided by the reference section as all reference and related reference books are preserved in the reference section.

As higher learning institute the university is always busy with research. They always need the facts and figures of recent developments in their subject of interest. Development of various techniques of library profession like literature searching, digital library services, Institutional Repository (IR) services, Online Public Access Catalogue (OPAC), full text article online journals services, a good number of different online databases, consortium, networking and resource sharing, indexing, abstracting, contents analysis, data processing, Current Awareness Services (CAS), and Selective Dissemination of Information (SDI) services, made it possible for the libraries to provide pinpointed and exhaustive information

services to the users. Advent of computer, communication and information technology, and Internet facilities have helped us a lot to collect and provide necessary information from anywhere in the world, if required. Modern university library should take the advantage of IT facilities and opportunities to feed the faculty members with appropriate information for promoting the research on various fields.

Serial section

Serial section should be made functional and responsible for i) organization of print journals, ii) continuation of subscription to online journals and online databases, iii) taking care of newspapers, newsletters, and annual reports, iv) sorting periodicals for binding and repairing, v) indexing: readers' guide to periodicals literature, vi) maintenance of gift and exchange publications, vii) rendering services to readers, viii) shelving and re-shelving, ix) maintenance of news clippings, x) miscellaneous. Every component of serial section is very significant and vital for research purpose. It has to be maintained duly, otherwise research work of the respective university will be hampered.

Audiovisual and IT section

University libraries should have the provision of keeping audiovisual materials in meeting the requirements of

students, faculty members, and staff members. Stock of audiovisual materials may include films, overhead projection transparencies, wallcharts, videotapes/cassettes, work of art, CD and DVD players, television, radio, CDs, DVDs, hearing tool, and etc. This area will help students a lot to have a clear picture and explanation about the area where he works, such as the student can have theoretical idea; can hear something, if required; and can view something, if needed.

It has been observed that the librarians of Bangladesh have fully understood the importance and use of Information Technology (IT) in libraries are essential. IT plays an important role in managing libraries of Bangladesh. This IT will help in discharging professional duties efficiently and effectively. Without IT no libraries would be able to provide quick and faster services to the user's community. IT has several functions in library.

The following jobs are involved with IT:

- Requisition of Personal Computers in consultation with the IT section of the university
- Installation of computers in different areas of the library
- Assist management in selecting library software for automation
- Help authority in selecting vendor of library software
- Support vendor to provide the requirements of library software

- Receive software from the vendor in verifying the requirements of the same
- Assist installing library software
- Help in sort out the problem of library software
- Look after online journal databases
- Keep track of online journals subscription, such as renewal of online journals
- Take care of e-books
- Oversee the cyber corner
- Maintain all PCs in the library
- Coordinate with the IT section of the university
- Look after the Wifi system
- Take care of workstations dedicated for searching library database and online journals
- Maintain hardware of PCs and update them, when required
- Create Institutional Repository (IR) for the university
- Establish consortium network for resource sharing
- Communicate with modern world for updating
- Supervise audiovisual materials

The above-mentioned job should be done by audiovisual and IT section of the library for smooth operation of the university library.

Services

The mission of any university library is to support the university community in developing lifelong skills in innovative and analytical thinking, research and

information literacy, and by providing distinctive collections, services, facilities and programs. The library would provide an array of distinctive facilities to library users with the help of state-of-the-art techniques and technologies (East West University, 2007 summer).

The nature and efficiency of services provided vary from library to library. The intensive services made available by some of the special libraries cannot be provided by university libraries over a whole range of subject interests without increasing the number of professionals in the library. However, with the emerging of ICT sector and coming of computers, university libraries are now in a position to provide a variety of services over a wide range of area, which were not possible before.

Usually, the university library should perform the following services for its users' community:

- All kinds of reading materials should be acquired, organized, and displayed in classified order using the techniques of classification, cataloguing, and shelf arrangements. Acquisition, classification, cataloguing and organization should be set up with IT facilities along with the use of library software for smooth management of work mentioned above.

- Circulation work in the library should be planned in providing lending services of books, periodicals and

other reading materials, so that faculty members and students would be able to make use of them at their convenience. Circulation module of library software should contain issue, return, borrowers' status, fine generation, reminder to users, and semester-wise blockage system for students, etc.

- Documentation services should be provided to the readers where they may have pinpointed access to the information and data they need through the use of Internet and computers.

- Reader's guidance service should be provided for efficient use of the library materials. Soft copy of readers' guidance should be made available in the web site of library of the respective university. So the readers are able to notice it directly and can use library accordingly.

- The library holdings should be extensively displayed and disseminated for use by the largest number of users electronically. Dissemination of library holdings can be done through manual system, if required.

Broadly, there are two principal services, which the library renders to its patron, i.e. (a) circulation services and (b) reference services (Sahai: 288-9).

According to M.A. Gelfand (1968:36), those are commonly performed in a university library fall into the following categories: administrative services, technical services, readers' services, and special services.

Administrative services: This service should be performed by the university librarian or his deputy. All management related jobs should be carried out by the higher authority of the respective library. Different types of software can be used for faster and better management of the respective library.

Technical services: Technical services should comprise the functions of acquisitions, cataloguing and classification, binding, photocopy, data entry jobs, creating barcode, preparing book card and book pocket, maintaining library database, compiling subject wise collections, stock verification, weeding out of reading materials, institutional repositories, making digital collections, and lending operations. All these technical jobs should be done through computers.

Readers' services: This service should include the functions of circulation, reserve book section, open shelf access, rental collections, journals services, reference, library hours, bibliographical services, CAS, SDI, inter-library loan, document delivery services, literature search services through Internet, full text article from online journals, networking services, and information services. This service is related to the processing job of reading

materials, which could be achieved by the use of information technology for providing better and faster services.

Special services: This service may include arrangement of orientation programme, seminars, lectures, symposia; conducting information literacy training programme, lectures on library services, training on basic library resources, etc.

No library can keep its existence in the society without its services. The most important service that a library, should always perform for its users, is to have least inconvenience for them in their usage of collections.

Administration

Library is an institute within the institute. It has its own administration to run smoothly. Administrative activities include: preparing and administering library budget; selecting, training and supervising the staff; planning library development; creating and administering policies and regulations; maintaining relations with university faculty members and officials; participating in meetings of faculty and other university organizations; developing and supervising book collection policies and procedures; participating in the planning and equipping of new library facilities and in the alteration of existing facilities; preparing reports and memorandum; conducting surveys and analysis of services; classifying library positions;

maintaining personal records and recommending promotions; transfers, salary adjustments and dismissals; participating in library conferences and professional associations; ordering supplies and equipment; maintaining financial records when required; monitoring IT based library services; publicizing library resources and services (Mostafa, 2004).

Administration is an important job for any library of any university. If we run administration smoothly, we should require carrying out above-mentioned responsibilities properly. We should have IT facilities and special types of software in managing e-governance in the university. These IT facilities and software would help us in making decision quickly and expedite to implement the job.

There are four basic important aspects of library administration, i.e. *library building, budget, staff and patrons*. We should have these four elements for the greater interest of library administration. Librarian of the university plays a key role in library administration. The librarian acts as a coordinator within the university. The librarian should try to reduce the gap between university management and library management.

The below mentioned organogram could be followed for smooth management of library services. A total 37 skilled human resources are required for operation of a modern university library.

FIGURE 18: PROPOSED ORGANOGRAM FOR MODEL LIBRARY
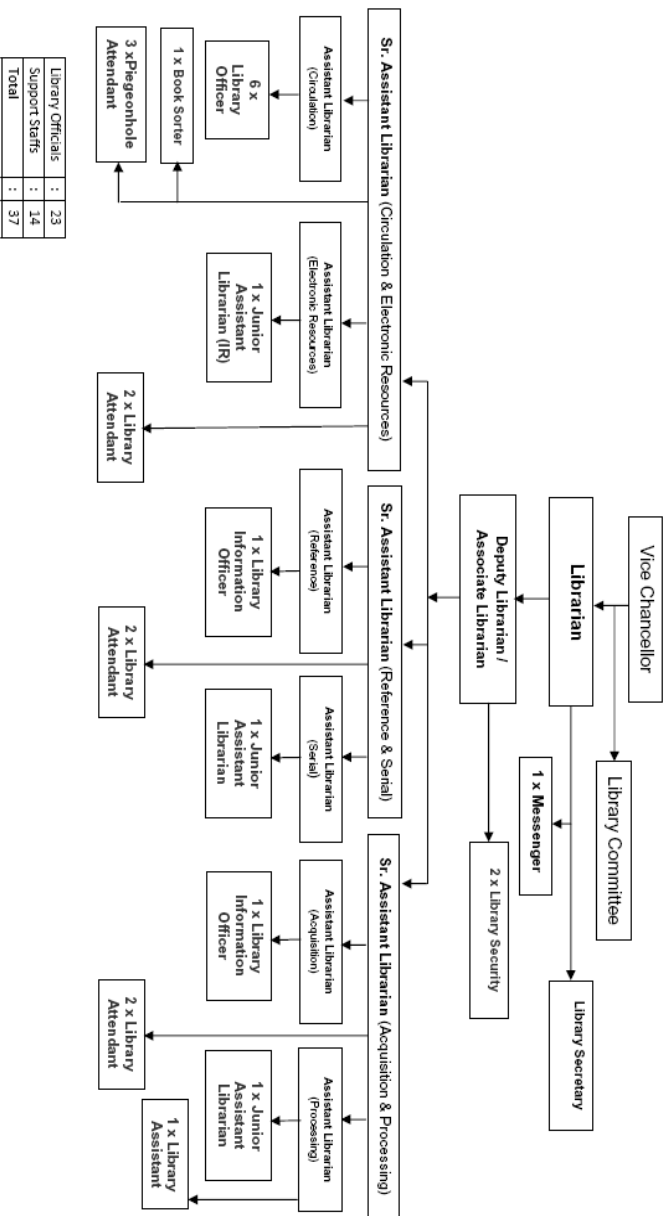
Library Officials	:	23
Support Staffs	:	14
Total	:	37

361

Automation

Using computers to assist in processing information is the goal of any automation. Computers have traditionally been used in the management of libraries in many ways. Traditional library automation has been dealt with only cataloguing of bibliographical information of reading materials, i.e. initially attention had been paid to storage and retrieval of information only. But those were not the standard of library automation. Rather integrated automated library management systems come with standard modules including acquisition, processing, circulation, cataloguing, serials controls, reporting, etc.

Automation is one of the important IT based library activities by which we can manage and run our library efficiently and effectively. Automation means dependency on machine which has remarkable influence at our work place. With the help of machine people perform their job comfortably, quickly and ultimately it increases peoples' efficiency and effectiveness. In case of library, the term "automation" basically means computerization of library activity. Computer influences all fields of human activity. Sharma (1995), stated in his book that "the invention and increasing use of computers in various fields of human activity is witness to the fact that the computer is considered to be essential component for all-round development. Computers' entry and its continuance in almost all fields of human endeavor is due to its invincible qualities, viz., the splendid

speed to act in nano-second, the superb capabilities to do unmanageable and impossible looking things, the unlimited capacity to store ocean of information on to tiny storage mediums, immense capability to perform repetitive jobs without fatigue, the radical power to sort, arrange, retrieve and disseminate information almost instantaneously, etc. Day by day it is becoming more and more indispensable for the society and has swayed all fields of human activities. Its use in the library is the need of the day and its application will certainly increase the use and utility of libraries."

We need automation in the university libraries for the following reasons (Sharma, 1995):

- To create an effective customized software solution incorporating web application
- To integrate acquisition and circulation without data duplication or redundancy
- To create Internet web application for the teachers/students to interact with the library database from anywhere which provide necessary information
- To create an environment for single point of entry into the library database
- To incorporate bar code reader for issue/return of the books at the library
- To provide customized reports for the management
- To increase storage capacity
- To organize vast information easily and quickly
- To disseminate information efficiently

- To make resource sharing easy and quick
- To avoid waste of time in repetitive works
- To accommodate increasing work load with the available frame
- To increase communication facility
- To empower access to information
- To ensure timely access to learning resources
- To open avenue of better education
- To save time of library personnel and users
- To increase performance of individual
- To facilitate marketing of library services
- To benefit the organization/institution and society (Chowdhury, 2002).

Different areas of library automation

The following areas and tasks of the university library should be computerized:

Administration and maintenance

- Making employee's directory
- Duty charts
- Duty roster for weekend/holidays
- Recording of different committees
- Preparing library rules and regulation
- Maintaining periodical statistics
- Maintaining periodical reports
- taking stock verification
- Maintaining leave record of employees
- Internal office order/memo

Acquisition

- Vendor directory
- List of books recommended
- List of books approved
- Placing orders to vendors
- Receiving list of reading materials
- Making accession
- Integration of acquisition data with other library service modules of library software

Classification

Though selection of notation is done manually, but the computer can support in choosing the respective key word. Stored classification number would be able to show what is/are the key word(s) involved with same notation done before for the similar types of books.

Cataloguing

- Integration with acquisition module
- Printing catalogue cards
- Searching a document from different angles
- Preparing reading list on the basis of catalogue
- Establishing open access catalog with user friendly menus

Circulation

- Integrating with acquisition and cataloging modules
- Issuing and returning of library materials with use of ID number for materials and borrowers
- Imposing maximum limit of materials to be issued to a particular borrower
- Maintaining different category of borrowers with different borrowing limits
- Upholding blockade system for different types of users
- Generating fine system for overdue books and other reading materials
- Over riding the maximum limit, if necessary
- Giving gentle reminder through e-mail for returning books in time
- Charging/discharging with barcode
- Introducing inter library loan

Serial control

- Input of bibliographic detail of periodicals
- Output on various forms (such as consolidate list, subject wise list, frequency wise list, country of origin wise list, etc.)
- Editing, addition, deletion etc.
- Searching a particular issue
- Issuing reminder in respect of missing issues
- Inputting articles' information
- Searching articles from different ways

Documentation

- Current Awareness Services (CAS)
- Selective Dissemination of Information (SDI) services
- Preparation of subject bibliography
- Electronic alert services

Reporting

- Generation of reports, which will help in managing the library in better approach
- Compilation of new arrivals from the database
- Stock taking report generated from the database
- Prepared defaulter list of borrowers, etc.

Electronic access

- In house digitization
- CD library
- The Internet
- Subscription to electronic journals and different databases
- Web page maintenance

Networking

- Local Area Network (LAN)
- Metropolitan Area Network (MAN)
- Wide Area Network (WAN)

Through the mechanism of networking system the concerned university should share files, folder to and from any destination (Chowdhury, 2002).

Library software

On the basis of one's need and ability in terms of resources and skill, the area for automation will be considered. Library Software is one of the important issues of library automation. This software may be purchased from reputed vendor or develop internally. There are many tested Library Software in the market. Internationally reputed software is very expensive. If we would like to have readymade software in hand quickly, we should purchase reputed library software. These softwares being already been tested, there is little possibility to disturb at the implementation phase and needs little maintenance initiative. Some vendors in Dhaka developed Library Software for some organizations or universities. Those are yet in test phase. But these Bangladeshi library softwares are comparatively cheaper. Dhaka University Library procured internationally reputed software which is costly. In house development of software takes time; it can take one year or more. The software development process should go through system analysis, programme development, testing, implementation and maintenance. So, skilled manpower is needed not only for development but also for the maintenance (Chowdhury, 2002).

In the meantime some libraries, such as libraries of Independent University, Bangladesh (IUB), North South University, East West University, BRAC University, BUET, American International University, etc., developed their own customized software by which they created their specific databases as per their respective needs and these databases are working properly.

Other software

Operating software: Windows 98, Windows 2000 professional, Windows XP, Windows 2007, Macintosh OS, OS2, etc.
Operating software for server: Windows 2000 server, Novel, Linux, Unix, etc.
Word processing software: Word 97, Word 2000, Word 2007, etc.
Database software: MS Access, Oracle, FoxPro, dBase, etc.

Hardware requirements

Whatever software we take that should be installed in a computer. Now-a-days personal computer is very popular. Depending on the area of computerization, number of computers and work load, one library needs to plan for hardware procurement. Number of computers to be procured depends on the load of usage, facilities available and space of the library. Dedicated computers may be needed for catalogue or OPAC. Library having busy circulation unit will

need separate workstations or PCs. Naturally, in a large library, every section, in fact almost all persons of a section, needs independent PCs. The CD/AV section (if any) should have multimedia computers. All PCs should be connected through local area network (LAN). Star topology in LAN gives better performance. So at least one server will be needed to dominate the LAN. A large library may have several servers to perform specific job by a specific server, such as database server for maintaining central database. Star topology needs hub or switch which connects computers through cables. Of course some other accessories, i.e., net-work card, connector, etc., will also be needed for LAN. For better security one library may decide to use Unix operating system; in such case Unix machine should be procured.

Some other hardware may also be needed. Barcode reader or chips technology for circulation is essential for automated charging/discharging system. Scanner for scanning internal resources may be procured with a cost of Tk. 9,000.00. CD writers are a useful addition for library. Library can make backups, save different databases and make copies of CD-ROMs for internal use with the CD writer. University library may keep their records and photographs on CD-ROMs (Chowdhury, 2002).

Connecting with ISP

The Internet is now-a-days becoming an important, probably integral, part of a library. For the internet

connection one library needs to have connection with the Internet Service Provider (ISP). Broadband connection proves efficiency over the dialup connection. All should consider higher bandwidth for establishing cyber café section in your library.

Power support

Power failure is a normal phenomenon in our country. The country is facing severe power shortage; in that case we need to live with this problem. UPS (Uninterruptible Power Supply) is a solution for a short period. Power back up for a long period IPS (Instant Power Supply) may be installed with UPS. Rahim Afroz of Bangladesh is producing IPS (Chowdhury, 2002).

Security

For securing libraries, all libraries should introduce the Integrated Book Protection System. This system installs sensor at the exit door of the library and affix labels inside the cover page of the books.

Skilled Human Resources

Computerized system is not a substitute of human resources. It is just a tool for managing library activities in faster way. Success of computerized system depends upon how effectively it is used by the people in performing their

activities. These people should be trained properly. A very good system might also collapse due to mishandling of the system. Without appropriate personnel the system output cannot be maximized. In fact before procuring or developing a computerized system people working in libraries should become familiar with computers and computerized database system. This familiarity will help the library to procure or develop and install appropriate system. The system then can be run with a very little disturbance. Sustainability of the system depends on efficient, effective and skilled manpower. Of course, appropriate and logical salary and status should be ensured to have the skilled manpower for the sake of sustainability of the system (Chowdhury, 2002). A total 37 skilled staff members are required for managing smooth library services.

Limitations

There are some limitations of computerized system that may still remain in spite of best efforts taken in the development process. Information technology is growing very fast. So even the most advanced system may bear some risk of becoming outdated. Though flexibility is an important characteristic of computerization system yet it takes some effort to change the system. So it might put some obstacles to any change process in the organization. Innovativeness and intuition of persons based on experience are very important for development. But computer lacks this ability which is the hallmark of a

successful person. The other limitation of computerization is data entry, which is a slow manual operation. In spite of all the progress made in the field of information technology, we are still away from truly paperless office (Mishra, 2000).

The library automation makes us faster to provide speedy and accurate information and services. The process is still running to accommodate more state-of-the-art techniques for making more digital library in the university community of Bangladesh.

Digitization Programme and Institutional Repository (IR)

Digitization programme and institutional repository is a new concept after a robust development of Information, Communication, and Technology (ICT) sector in the last decade of 20th century. After emerging ICT, a lot of development in terms of telecommunication, electronic communication, and networking facilities, has been made globally. According to Khan (2006:4), the idea of digital library initiated with modernization of libraries with electronic devices. The term 'digital library' has synonymously been used for meaning 'automated library', 'electronic library', and 'virtual library'. This has tremendous impact on the traditional role of library and information centres. The terms 'virtual library', 'electronic library' and 'digital library' have become a reality.

373

In the ICT sector something unusual happened in the continuation of networked information revolution at the end of 2002, shifting the dynamic among individually driven innovation, institutional progress, and the development of disciplinary academic and scholarly practices. The development of institutional repositories (IR) emerged as a new approach that allows universities and research organizations to apply serious, systematic influence to accelerate changes taking place in scholarship and scholarly communication (Lynch, 2003).

Institutional repository may be considered as the beginning of digital library and it could be considered as an extension of library services besides other traditional and automated library services. For references services, digital library plays an excellent role in providing faster and quick services to the users' community. Generation of new knowledge, effect of technological changes in communication, many technology trends and development efforts all came together to make institutional repositories strategy possible.

Defining Institutional Repository

An institutional repository is a new method for capturing, collecting, managing, disseminating, and preserving scholarly work created in digital form by the constituent members of an institution. In a position paper, The Scholarly Publishing and Academic Resources Coalition

(SPARC) examined the strategic roles of IR, which played and outlined the viability and long-term impact of institution-based digital collections that preserve the research and intellectual output of an institution. IR adheres to an open access model, by centralizing and preserving the knowledge of an academic institution and making it accessible to anyone with internet access. An effective IR of necessity represents collaboration among researchers, librarians, information technologists, archivists, records managers, administrators and policymakers (Anuradha, 2005).

Why we need IR for Universities

We need institutional repositories to bring together and preserve the intellectual output of a laboratory, department, university, research organization or other entity. The inspirations and commitments are to change the process of scholarly communication that has also started serving as strong motivators. Computers have been present everywhere on campuses since the late 1980s. Scientists, researchers, faculties, students and support staff of an institution or organization are comfortable with the power of online communication. Faculty members, scientists and researchers would like to store their own materials and have them available on personal or institutional web sites. The development of the Internet, web sites, and more powerful search engines, have allowed us to think in practical terms about the establishment of central facilities for storing, archiving,

preserving, and making intellectual and creative materials available. Repositories may be limited to one field, one department, one institution, or a consortium of several institutions. Collaborative programme for building institutional repositories may be considered as cost effective. If a group of members or a consortium work together and share their resources through Internet, it reduces costs for each member while increasing access to digital materials. Repositories in universities and research organizations may include preprints and post-prints of journal articles, technical reports, white papers, research data, theses, dissertations, work in progress, important print and image collections, teaching and learning materials, proceedings of the meeting and materials documenting the history of the institution or organization.

Benefits of IR

The benefits we may have from institutional repositories are as follows:

New role of institution's library increases as a potential partner in university and research organization. Longtime preservation of intellectual output, proceedings and administrative documents of respective organization is one of the most important aspects of institutional repositories. Wider and rapid dissemination of resources may be possible through institutional repositories. IR may treat as a solution to the problem of preserving institution's

intellectual output. The space that required by the physical documents will be saved. IR increases the accessibility to knowledge assets such as numeric, video, audio, and multimedia datasets. IR gives an opportunity to provide better services to institution's learning community. There is an option for exposing institution's intellectual output to researchers all over the world who would not otherwise have access to it through traditional channels. It acts as a new boost to learning communities outside of the Institution. It is a scope in maintaining control over Institution's intellectual property. The libraries of other universities and research organizations will be benefited through demonstration and sharing the experience of institutional repositories. Trained library personnel will be made available for the library which is in fact a long-term benefit. IR will enhance the image of institution's prestige. In the long run cost will be saved by establishing IR.

Prospective Research Organizations in Bangladesh for Building IR

All public and private universities and a number of research organizations are the prospective research organizations in Bangladesh which might have the ability to organize IR in their respective organization. Public universities have their own publications and a number of unpublished documents but lack of infrastructural facilities, budgets and skilled IT persons in the university libraries are the main reasons for not reaching their desired goals regarding IR. Private

universities started their academic activities since 1992. Top ranking private universities are well equipped in respect of IT facilities and skilled human resources. But comparing to public universities, the private universities have less resources. However, private university libraries, particularly top ranking universities, are more progressive in organizing electronic resources rather than public universities. The collective efforts for making IR in Bangladesh will definitely bring excellent results.

Hybrid Library

This is the age of information explosion. In this age, library is not only a library as it used to mean in the past, but it is more than the housing of a variety of different materials under one roof and the development of a new service concept. Along with all these changed and developed concepts, the libraries of this age are moving towards a so called 'Hybrid Library' concept. The libraries of this concept are required to exist concurrently the 'traditional library system' and 'IT based library system' under one umbrella. Khan quoted in his paper (2006:4), a hybrid library is a library where both "digital and printed information resources co-exist and are brought together in an integrated information service accessible locally as well as remotely." Since Bangladesh is located in developing countries, so considering that context, all university libraries of Bangladesh should maintain hybrid library system.

Wrapping up

Bangladesh is one of the potential developing countries where education is the vital sector for producing skilled human resources in Bangladesh. Libraries play a pivotal role in educational institutes in respect of organizing and disseminating library resources since long. Recent addition of IR performs an important role in giving a new shape of our library. In that case, the open access movement and institutional repositories could contribute significantly to economic growth by broadening the market for scholarly publications and research results, especially in science and medicine. Lower access costs would broaden usage. Economist Joel Mokyr found in his studies of knowledge creation and dissemination that lower access costs brought knowledge to people who used that knowledge as the basis of invention and innovation (Mokyr, 2002). He also pointed out that ideas and knowledge may be expensive to generate, but inexpensive to use once implemented. The future will bring greater innovation and technologies through open access and institutional repositories.

Resource Sharing

Library cooperation, resource sharing and networking are used interchangeably as synonymous terms for collaborative efforts of information exchange among libraries. Library cooperation and resource sharing have become most essential for the proper functioning of

libraries. Cooperation among the libraries may be undertaken in various areas of fields. A survey was made by the British Library Research and Development Department and identified the following fields of resource sharing (Mannan, 1997:21-22):

-- Exchange of users (referral)
-- Exchange of materials
-- Exchange of information for users
-- Contribution to Union catalogue
-- Exchange of information on acquisition
-- Exchange of periodical holdings list
-- Exchange of bibliographies
-- Exchange of information on staff
-- Exchange of information on staff training
-- Exchange of information on services
-- Exchange of management information
-- Joint acquisition of materials
-- Subject, specialization
-- Cooperative disposal of unwanted items
-- Cooperative production of service tools
-- Cooperative storage of materials
-- Cooperative reader instruction
-- Cooperative staff training
-- Cooperative building programmes
-- Cooperative administrative services
-- Cooperative bibliographical services
-- Cooperative binding
-- And Cooperative transport scheme, etc.

Library cooperation is "making the maximum amount of literature available to the maximum number of users without a proportional increase in expenditure. The term library cooperation also signifies a planned system of operation whereby the library resources and functions are shared by a number of libraries to ensure user's access to more documents and services he requires and planned library budget and allocation of funds to provide maximum service in individual libraries at less cost" (Mahapatra, 1983:18).

Mannan (1997:23-24), has stated in his thesis that there are three levels of library cooperative activities which are as follows:

Library cooperation – any activity between two or more libraries to facilitate, promotes, and enhance library operation, use of resources and service to users.

Library consortia – a specialized type of cooperative library activity usually restricted to a limited geographical area, number of libraries, type of library or subject interest and having some degree of information of administration and procedures.

Library network – a specialized type of library operation for the development of cooperative programmes and services including the use of computers and telecommunications and requiring the establishment of a central office and a staff to accomplish network programmes rather than merely coordinate them.

After analyzing different aspects of library cooperative or resource sharing programmes it is found that no library in the world can claim that they are self sufficient in its resources. Every library / information centre big or small has to depend on other libraries to supplement its resources to meet the information needs of its clientele. The dependence on one another has been primarily due to the following factors:

-- A large number of literatures;
-- High cost of reading materials;
-- Interdisciplinary growth of literature; and
-- Scarcity of library funds.

If we analyze the above-mentioned factors, it is found that every library needs a large number of literatures, but the cost of those literatures is very high. We also know that every library has its own limited budget. Since the budget is limited, so no library would be able to fulfill its resources by the limited budget. In that case every university library must have the option of library cooperation or resource sharing. So, the university library would be able to satisfy their users by its resources. Library cooperation also implies what cannot be done individually or separately that can be done through cooperation.

As stated by Kaula, the objectives of resource sharing are to maximize the availability of materials and services and

to minimize the expenses (Kaula, 1986:4). It is true and applicable for all types of libraries in developing, under developed and developed countries. Bangladesh is located in developing countries. So all university libraries should have some programmes on resource sharing or library cooperation by which they can meet up the users' requirements.

Facilities and Services for Users with Disabilities

All universities of Bangladesh should have the option to create facilities and services for the users with disabilities. As disabled persons are the parts of our society. In order to create an efficient and effective library facilities and services for the disabled, university libraries need professional librarians and professional staff who are up-to-date and are aware of the latest developments about facilities and services provided for the disabled persons. That will have the extreme effect on their services.

As stated by Kishore (1999) in her paper, it should be a collective responsibility to promote quality services by achieving a good insight into the problems faced by the disabled persons. Library staff must recognize that some disabled persons have no control over their behaviours and must be competent enough to handle difficult situations. The library staff must be prepared to give individual attention for understanding disabled persons and their communication mode. This communication mode is very

important for providing library services to disabled persons by the library staff. For that reason, the following features may be considered as fundamental for creating and developing library services for disabled persons.

a) Training of library staff, b) Developing user assistance schemes, c) Offering special services

a) Training of library staff

Professional library services depend largely on the continuous upgrading of staff through training on a regular basis. It could be fortnightly, monthly, or seasonal training. Special training requirements can be determined by the library management and training officers depending upon the skills and training needs of the individuals. Once the need has been assessed the method of training can be planned. A guideline for a very simple and effective training plan is given below that could be implemented without any difficulties:

Objective:
The objective of the training is to familiarize with important aspects of disability and disabled users in a library environment.

Structure:
A week-long training course of lectures, discussions and practical work can be held. The practical training could be

held in small groups giving each group an opportunity to work with all types of disabled users.

Materials:
A training manual can be organized with the resource package that could be used for the training purpose.

Contents:

-- Concepts on disability: visits to hospitals, centres for the blind and other kinds of handicapped persons.
-- Developing communication and counseling skills.
-- Professional library services, single line of command, concentration of effort, time bound work, field orientation and linkage with research.

Review:

In training and work review session, staff of all levels can report and discuss their successes from which lessons may be drawn.

b) Developing user assistance schemes

The library staff should be competent enough to create an efficient and effective user assistance scheme for the disabled persons. Once the library workers are trained they will feel that it is their responsibility to provide quality services to the disabled persons. How the assistance can be

given to the disabled persons, that schemes may be considered as follows:

-- Provide the disabled users with reading lists and catalogues, high demand materials and lecture tapes.
-- Deliver books and other documents from library shelves.
-- Photocopy library materials and enlarge them for the partially blind.
-- Extend loan periods or modify other lending rules on an individual basis.
-- Accept telephone requests and provide reference services.
-- Conduct orientation tours and information skills sessions.
-- Provide audio visual equipment.
-- Assist in the use of computer aided learning equipment such as CD-ROMs, optical disks, etc.
-- Provide access to library facilities by ensuring that directional signs are labelled at appropriate locations with large, simple and clear messages.
-- Help with numerous bibliographic citations.
-- Instruct on how to use available library technologies located at workstations
-- Keep special parking spaces in the campus for the disabled persons.
-- Arrange restrooms on all floors of the library wherein patrons with disabilities can be   accommodated.

c) Offering special services

Different types of disability require different types of specialized services.

-- Library services for the blind must enable them to have access to equipment such as Braille printers, Braille embosser and tape duplicators, Kuzweil reader (a text-to speed reading machine with synthesized speech output), closed circuit TVs for magnifying regular text, PCs with CD ROMs, Powermacs with CD ROMs, large print tape writers, special track tape recorders, computers that are having adaptable equipment such as voice eyes.

-- Services for speech and hearing impaired users must include TTD communications (a device also known as TTY-text type telephone) for those requiring library questions answered on telephone. Librarians should also familiarize themselves with American sign language which is considered to be the common language of the deaf community.

-- For the physically challenged users, the library facilities must be barrier free to wheel chairs and other mobility devices and ensuring that all devices including door handles are designed for easy operation.

-- Since reading is a common problem for the persons who are suffering from mental disability, they may enquire assistance in identifying the materials of both the print

and electronic types of documents. They can be served by helping to locate and retrieve materials. They may require help in turning catalogue cards or entering commands on the computer. People who are suffering from mental illness such as schizophrenia should be motivated to read books on self-development and may need constant counseling to use library resources to overcome their depression. This is termed as "bibliotherapy", that is, using books for therapy (Kishore, 1999).

[Can be seen at http://www.ifla.org/IV/ifla65/papers/044-132e.htm visited on 05 October 2008]

-- Webster's students braille dictionary and audio books should be made available in the disabled students study area.

-- The library should have state-of-the-art computers for disabled students, featuring Microsoft Office, internet applications, access to electronic research databases, Adobe Reader, and course specific applications. JAWS (screen reading software) and ZoomText (text enlarging software) should be made available from any computer of the respective university. The workstation is located on a table that can be adjusted higher or lower and should be accessible by a wheel chair.

[Can be seen at
http://www.csulb.edu/library/guide/DisabledServices.html
visited on 05 October 2008]

Libraries and library staff can thus play a significant role in bringing hope to the miserable conditions of the disabled world. Adequate budget might be required in order to maintain the above-mentioned library services and subsequently expand them to fit the latest technological advancement.

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Chapter IX

RECOMMENDATIONS

Hughes stated (1991:29) that information has always been essential to political, economic and social intercourse. In that context information plays a vital role in changing and developing socioeconomic condition of Bangladesh. The national and socio-economic development of our country can not be thought of without the effective use and support of information. Transfer of information technology (IT) made this work, to some extent, successful and simple. With the advent of information technology, it has become an indispensable infrastructure in the globe with more and more high speed information services year by year. Information technology today allows us to create, store, manipulate, retrieve and transmit information in such a way which we had never dreamt before. This technology has a great impact on rural, industrial, cultural and research development in the country. The IT has grown tremendously in recent years. The technology has been changing in such a manner that an unbelievable large amount of information is available on the Internet and people of all areas have access from anywhere in the world to that internet. It is virtually impossible to perform any activities without the help of information services (Sattar, 1997:338). This information services is provided by libraries.

Among all types of libraries in Bangladesh, top ranked private university libraries in higher education institutions are playing leading role in providing fastest and quickest services to the users' community with a few exception. Limitless potential has been in information technology for its versatile and useful application in libraries. This has become a fundamental part of all library resources, operations and services. Use of IT, in libraries, is to increase the efficiency, productivity, and effectiveness of library services. The success of modern library management is dependent on the effective utilization of information technologies.

The current study has been conducted to introduce the present status of use of IT in some selected private university libraries of Bangladesh. A comparative study between leading public and private university libraries was also made in terms of use of IT in the respective libraries. This chapter provides a summary of **problems, recommendations, conclusion** and ends with **limitation of the study,** which will be applicable for private university libraries in Bangladesh.

Problems

Bangladesh is one of the developing countries of the world where information technologies started in 1964. Since then IT has, gradually, taken place in all sphere of our daily

life. A number of problems have been observed during conduction of the study. The problems are given below.

No long-term planning – No desired target can be achieved without any planning. No university is yet being developed any long-term plan for the development of university libraries.

Administrative hurdles - This problem is much more delicate in public university libraries than private university libraries. Administrators, policy makers, and government executives are not fully aware of the importance of information technology. Moreover, library administrators of public university libraries failed to make its importance clear.

Lack of knowledge on IT - Lack of knowledge of technological developments has created a critical obstacle to the installation or development of information technology facilities in libraries.

Lack of respect of librarians – As the librarians are not duly respected by its authority, obviously the librarians are not that much keen to take any initiatives for the development of IT facilities.

Lack of competent and skilled staffs – It is assumed that a small group of library professionals are experienced in using computers and other IT related facilities. This group

of people, mostly, lives in Dhaka. In general, library professionals in Bangladesh do not have adequate knowledge on computer application and new technologies, except a few. Most public university libraries are run by minimum staff members who are trained and skilled in IT.

Lack of funds - Lack of funds has seriously obstructed the development of necessary IT infrastructures and effective information services.

Resource constraints – Every university is facing budget constraints as the authority of the respective university does not want to invest a good amount of money to library. It is very tough to manage budget for developing IT facilities in public universities. It is true, to manage public money for the development of public university libraries is a difficult job as the Government has its limited resources. In case of private universities, it is also very difficult to get budget approval from the authority for overall development of library. Most owners of private universities look for earnings and benefits. Inadequate fund has made the possibility of IT application in libraries more complex.

Short of infrastructural facilities – It has been observed that physical facilities of public university libraries are better compared to private university libraries. Size, shape and facilities of private university libraries are not adequate to serve students properly. Infrastructures of

private universities are not good, though a small number of universities have already taken initiatives to make permanent campus, i.e. NSU and IUB at Bashundhara and EWU at Rampura. Inadequate physical facilities hinder the growth of information technology. Telecommunications network and an uninterrupted power supply are vital for Bangladesh.

Status of Information, Communication, and Technology (ICT) resources – ICT does not mean only use of computers. ICT means more than that. Attention has not been paid duly to communication and other related technologies. Some university libraries have Internet connection but speed is not up to the marks. Most libraries are using microcomputers containing low configuration which, in some cases, may not support advanced IT system.

Software problems – Software is one of the vital tools for library automation. All university libraries surveyed use indigenous library software except DU. DU Library is using GLAS software but due to administrative and technical problems that software could not be updated. AUST Library does not have any library software.

Standardization problems – All university libraries surveyed do not follow any standard for computerization and automation purpose. Every library carries out their work in its own way.

Non-availability of latest product of information technology – Sometimes some product of information technology has not been released timely in developing countries. Developing countries like Bangladesh has not been able to take instant benefit of development of information technology.

Psychological problem - The unwillingness of library professional to accept new information technologies obstructs the development of IT-based libraries.

Lack of training programs in information technology – There is a scarcity of training programmes in information technology in Bangladesh, particularly, in the field of library and information science. It has been observed that some libraries are run with good IT facilities, those are run by the help of IT expert of the respective universities. At the same time it is also true that there are some library professionals in Bangladesh, who are good in IT and some of them have IT background.

Implementation of IT – No library can provide modern library services without implementation of recommended IT facilities;

No networks – At present, there is no network among the university libraries of Bangladesh.

Absence of e-resources selection policy – Collection of e-resources in surveyed libraries is not significant. In fact, no collection development policy for e-resources is yet being made.

Lack of online purchase of reading materials - Librarians of private universities are facing great challenges in purchasing books due to tender system. If the system continues, it will be very difficult to provide timely services by the librarian of respective university. Concerned authorities and administrators of private universities must think about the cancellation of tender system in order to acquire books timely. There is no policy of online purchasing.

Users' attitude towards use of IT in libraries – Users' attitude is not good towards usage of information technology in libraries. Most undergraduate students of universities are not that much aware about the systems and services of libraries in Bangladesh. Maximum undergrad students borrow text books from the library for meeting the requirements of class room studies. Users of universities cannot work as a pressure group for use of information technology in university libraries in Bangladesh.

BIPC Consortium – There is only one consortium in Bangladesh named Bangladesh INASP-PERI Consortium (BIPC), which is coordinated by Bangladesh Academy of

Sciences (BAS). All members of the consortium finance regularly in sustaining the network. It has started functioning in 2007 and till now (January 2009) it is working but struggling to manage fund. No government patronage is available for maintaining the consortium.

Non-professional staffs – An attitude has been found with the authority of private and public universities both in appointing non-professional staff members in libraries, who do not have any professional qualifications, experiences, ideas, and knowledge on IT. They do not have sufficient knowledge for potential use of information technology in libraries. Non-professional staff are not willing to take any challenges for the development of libraries. Non-professional staff are also isolated from the mainstream of library professionals in Bangladesh, which hampers the overall development of libraries.

Lack of initiatives of the University Grants Commission of Bangladesh - Lack of initiatives of the University Grants Commission of Bangladesh is one of the primary issues by which application and use of information technologies in university libraries can be influenced. No policy has yet been taken by the University Grants Commission of Bangladesh for use of IT in university libraries of Bangladesh.

Lack of understanding of private university authorities – Lack of understanding of governing bodies of private

universities regarding the growth and development of libraries. It has been observed that the concerned authority of most universities does not want to invest on information technology and overall development of library.

Lack of initiatives of professional bodies – Lack of initiatives of professional bodies is one of the important key issues by which application of information technologies in university libraries can be strengthened.

Absence of leadership – In absence of creative and dynamic leader in the field of library profession, use of IT in libraries is less.

Recommendations

According to problems mentioned and discussed earlier, the researcher has made an effort to recommend some plans to overcome the hurdles hampered in developing private university libraries of Bangladesh. These efforts involved; in terms of time, equipment, money and expertise; in developing the application and use of Information Technology (IT) in private university libraries of the country. Hope that the recommendations will help the private university administration and concerned authorities to formulate and implement plans and policies regarding introducing and using IT in private university libraries. These recommendations may be considered for

the better environment of the use of IT in private university libraries of Bangladesh.

- Proposed model plan mentioned in this study should be followed to establish any private university library in Bangladesh;
- The library building should be well-planned and well-structured. At least 20% seating arrangement, of total students' enrollment of the respective university, should be kept in the library;
- The building should be air-conditioned. There should be sufficient light in the stack, circulation, and reading area;
- Comfortable furniture is very much needed for studying a longer period of time in the library;
- The university libraries should take long range planning for developing a modern, automated, and IT based library. Library and technological experts in the profession may play an important role for that purpose;
- Appropriate IT-based infrastructural facilities should be developed immediately in all libraries for taking advantages of global online facilities and providing services to users effectively;
- Planning for library automation is done mostly by top level library professionals. The library professionals at all levels need to be involved to improve their self-confidence and motivation for successful implementation of IT;

- A detailed system analysis should be undertaken before implementation of library automation programme and IT based information services;
- Considering the developments in the field of information and communication technology and its role in information system development, as well as to cope with and suit to the need of the time and to make it suitable in line with the demands of beneficiaries, university library should be developed as an efficient and effective information centre for the benefits of the learning community;
- The concerned authority should consider IT to realize the improper physical facilities of the library. The authorities should provide libraries in suitable locations and with sufficient space to accommodate best possible seating arrangement, collections, services and to carry out functions properly; and develop libraries' collections (qualitative as well as quantitative) to justify the use of information technologies;
- Most personnel of university libraries have the lack of skill in managing IT. They do not have the knowledge how to use IT devices effectively. They should acquire IT management skill for increasing service productivity of the library. Besides, attitudinal barriers among librarians regarded as a major obstruction to realize the potential of information technologies;
- Development of technical human resources of the library and information centres is being felt urgently.

The activities have been greatly suffering due to the shortage of skilled and trained professionals. Training for library and information personnel in the application and use of computers in university libraries need to be provided. Professionally skilled human resources are very much required for any scheme like the use of information technology and automation in university libraries. The emerging technology will eventually have an impact on every part of library and for that libraries should create appropriate environment and prepare staff for this change. University libraries need to have a long term planning and well defined strategy for IT implementation in order to obtain maximum benefits and to minimize the problems of using IT. Programme should be undertaken to train university library personnel in handling and exploiting information technologies. Necessary steps also should be taken to develop properly trained and competent professional human resources for initiating and maintaining information technology based libraries in the universities of Bangladesh;

- The training should cover data entry, search information from library database, information retrieval, in-house IT operation, office maintenance, e-mail, e-governance, Internet surfing, and institutional repository;
- Professional library associations in Bangladesh should organize short term training programme for library

professionals in the field of application and use of IT in library and information services;

- An IT application requires heavy investment for computerization of library at the initial stage. So, sufficient funds in the form of special grants should be made available for modernizing university libraries and their operations and services. All university libraries need to restructure their budget policies for organizing IT-based libraries;

- Online purchase of books and e-books should be encouraged for ensuring quickest and smooth library services for its users. At the same time, tender system for purchase of books should be dropped from all universities as this is very time consuming and hindering library services;

- For purchase of foreign reading materials, prior permission from the Bangladesh Bank should be taken for using foreign currency. Bangladesh Bank should also be very broad-minded in giving permission for using foreign currency to purchase reading materials for the respective university. Permission should be given to each university at least for an amount of one hundred thousand US dollar per year;

- International credit card should be introduced immediately at all universities for smooth purchase of online reading materials in order to make sure timely services;

- A cooperative effort need to be developed where all university library professional could work in one platform for developing standard library software exclusively for library automation in university libraries of Bangladesh, IT implementation, and information retrieval. Libraries with the help of software development firms should develop standard library software packages for the use of computer and information technologies in the university libraries of Bangladesh. University libraries should run with standard library software in order to keep pace with global library and information systems. They should also develop a standardized thesaurus in Bengali language for the use of computer system employed in the university libraries of Bangladesh;
- Since a large number of information resources are now available in electronic form. University Libraries need to adopt a hybrid collection development policy in order to assemble resources with appropriate combination of both print and electronic media in a most cost effective manner;
- All major international databases in online and offline (CD-ROMs) should be made available in university libraries in Bangladesh to know the availability of information and literature required by faculty members, students, fellows, researchers and staff members;
- Sufficient budget provision should be made for purchase of furniture and equipment according to

need. At least 5-15% of the total budget of the university should be allocated to the university library. A minimum of 55% percent of the total budget of the university library should be spent on the purchase and maintenance of equipment and library materials. The remaining 45% percent should be spent on staff salaries and allowances;

- Concerned authority should provide separate budget for acquiring or subscribing electronic resources, particularly, for journals in electronic form;
- Budget provision should be made available for adopting the change of technology, i.e. software, hardware, and telecommunication facilities;
- To draw the best attention of brilliant scholar to the library profession, attractive pay scales and higher official status with future prospects should be offered in university libraries, particularly in private universities. Salaries and status of library professionals should be comparable with those of other professional services and fields;
- Professional associations [*Library Association of Bangladesh (LAB)* and *Bangladesh Association of Librarians, Information Scientists and Documentalists (BALID)*] of Bangladesh are basically needed to come forward to make awareness among the librarians about the potential advantages of the use of information technologies and to encourage the librarians to go ahead for automation;

- The associations should carry out the challenge of raising the status of libraries and information service personnel in Bangladesh;
- Professional bodies should draw the attention of the state authorities to convince and make them understand the importance of application and use of information technologies;
- Pioneer library professionals; who have knowledge on Library Science, Information Technology, English Language, and finally, international exposure on related field should come forward to make the university authority understand about the benefits and impact of IT use in libraries;
- The ministry of Education, Science and Technology, and UGC, should come forward to help universities for using information technologies in respective libraries;
- The Government of Bangladesh should make sure duty free access of IT equipment for all educational institutions in Bangladesh. The Government should also ensure purchasing and maintenance of computers and other related technologies;
- Librarians should convince administrators at the higher level to make them understand the importance of the use of computers and information technology in libraries, which they need for decision making. There is a felt need to revitalize the negative interest of the authorities in all respect of the application and use of information technology;

410

- A National Technical Committee with the representatives from public and private university library professionals, and professors having IT knowledge of public and private universities, should be constituted set appropriate standards relating to technical aspects of the use of information technologies, resources sharing and networking systems. Since the country does not have any library standards which are essential for information services. Standards are required to be made to evaluate the performance of the libraries and library professionals;
- Opportunities should be made for library personnel to attend conferences, seminars, and workshops, as well as formal courses outside the country, which will keep professionals up-to-date with the latest developments;
- MARC 21 format should be followed for cataloguing purpose. MARC 21 is not a new format. The original American version of MARC became known as USMARC in the 1980s; there was also a separate Canadian version with minor differences called CAN/MARC. After making minor changes to both formats, the USMARC and CAN/MARC specifications were merged in 1997 to create MARC 21, the name intended to reflect the 21st century;
- An American standard communication protocol Z39.50 should be made available in all university libraries for the purpose of information retrieval. Z39.50 makes it possible for a user in one information system to search and retrieve information from other

411

information systems. It will provide interoperability between different web based information systems;

- Networking is one of the effective means of serving the users' needs comprehensively. The data communications support the establishment of networks at local, regional, national and international levels. Online access to different databases through networking system, e.g. LAN, WAN is essential for making world's most recent published information available to meet the needs of library users;

- Computerized union catalogue of reading materials should be compiled and made accessible to that by all;

- Libraries should pursue established standards for compatibility, exchange and sharing of resources considering costs and efforts;

- Every university should have its e-resources selection policy by which duplication of e-resources can be avoided;

- Need-based value added user services using IT facilities should be enhanced;

- All the libraries should have adequate number of computers for providing services and the concerned authority should provide more computers to university libraries for having access to OPAC, CD-ROM databases and Internet facilities by users;

- Users' attitude should be changed towards the use of information technology in libraries. Undergraduate students of universities should be oriented with the systems and services of libraries in Bangladesh;

- Consortium network in Bangladesh should be enhanced for sharing resources with minimum cost. At least three to four consortium networks should exist in the country for the benefit of all libraries considering the main aims and objectives of the same;
- Inter-library loan requests should be sent over e-mail. Documents should be made available in electronic media and should be sent, if required, to requester immediately as an email attachment. Documents containing a few pages should be scanned and send over e-mail on request to other libraries;
- High quality scanners, servers, and hardwares for IT facilities should be made available for providing quality and quickest library services;
- Information and resources should be shared on network through institutional repository of the respective university;
- Skilled human resources recommended in the model plan of this study should be appointed to run the library;
- One IT professional should be appointed, if the number of computers in the library is more than 50. IT personnel should be increased as per ratio of computers in the library;
- A broad band communication channel, if possible, through optical fibre should be developed for transmission of bulk data;
- Digital library environment should be created for the greater benefits of users, particularly, those who are

doing research in higher education institutes. The researchers desperately need latest research information within a shortest possible time. Considering this, area-wise digital library environment should be considered for Bangladesh;

- The printed materials of the respective university should be gradually digitized to make these available through the World Wide Web system;
- The University Grants Commission of Bangladesh should encourage private university authorities and make some rules to convince them for using information technology in university libraries;
- The private university authorities should be very sympathetic and kind to invest for the use of information technology in university libraries of Bangladesh;
- Adequate steps should be taken by the respective university and the Government to implement the above-mentioned recommendations.

Conclusion

The problem of enormous growth of literature has gradually been resolved with the help of information technologies. Information technology is changing the work of libraries and information centers. Particularly, the private university libraries of Bangladesh need technology based library services in order to provide the same quickly. Information technology refers to the facilities of

storage, retrieval, dissemination and transmission of data, information, and documents in electronic formats, such as computers, microelectronics, video-disc systems, optical storage systems, hypertext and hyper media technology, E-mail, and internet, and other type of telecommunication links. The most important development in the information storage technology is the computer and CD-ROM systems. Information technology today permits us to create, store, manipulate, retrieve, disseminate, and transmit information that one never dreamt before.

Information technology has made an easy and faster access to the world of information and literature. Users can now easily search for information and make literature searches, use online networking system. In spite of the severe economic constraints, electronic storage systems and telecommunications networks have been becoming increasingly popular even in the least developed countries. Bangladesh has been gradually adopting various types of information technologies to provide improved services.

During last one decade, a grand success has been achieved in the advent of information storage and transmission technologies.

Information technology should be regarded as capital goods. It means information has become an economic commodity which should have its place in economic theory. Information is now collected, stored, maintained,

applied, bought, and sold at a price. It has come as a factor in production, equal of land, capital, and labour. Information technology has converted information into goods. All university libraries of Bangladesh should cautiously make a note of all these points. They should make plans and programmes considering information as a power in order to improve the socio-economic-political and educational scene of Bangladesh.

One of the important responsibilities of the Government is to organize itself internally to take full advantage of information technologies. The Head of the present Government has made a commitment to public to digitize Bangladesh. It is really very nice to hear from the Head of the Government that they are very much keen to develop IT facilities in Bangladesh. The Government has given serious thought on various uses of information technologies for the betterment of the nation.

The use of information technologies in Bangladesh has also been extremely affecting the information use patterns and behaviors, dramatically changing the mode of library operations and services, and making major impacts in audio-visual markets, education and training field, research, literature publishing, and etc.

Information technologies have important implications for rural, industrial, educational, research and development (R&D), socio-economic and cultural development of

Bangladesh. Sound and realistic policies relating to the use of information technologies in libraries and information services are all lacking at present. This is not to say that the policies should try to control the flow of information technologies. Feature of information technology is like water. Its flow and impact cannot be stopped. It softly surrounds an individual, and institution, or even a government. What Government ministers, advisors, and leaders, can do is to understand this process and optimize it for the benefits of the nation as well as the people of Bangladesh.

At present, different types of publications-journals, books, dictionaries, encyclopedias are now available in electronic formats, such as CD-ROMs, and they are now easy to use and handle and retrieve. Online access to foreign databases and access to online electronic journals are also available for consultation. Huge databases are also available with citations abstracts and in some cases, with text files in CD-ROMs, thereby facilitating easy access to universe of knowledge.

In automation and reorganization of services we should emphasis the need for more information with respect to how change comes about, who is involved in decision making, how better use can be made of present staff and their skills, and what measures can be used to determine the success of reorganization. Answering these types of questions will enable the librarians to creatively and

actively participate in shaping the future of libraries. Technological change is unavoidable, the future of libraries is open-ended.

We know that knowledge is power, and thus information is knowledge, which in turn, creates power. The power is governing the today's world. Simultaneously this power is transmitted with the means of information technologies. Finally, it is very much required to state that information and communication technology has been tremendously influencing all spheres of our life in Bangladesh. It is very important to understand the implications of the information technology and its users' roles and responsibilities, which concern us most.

But it is matter of regret that technological limitations still exist in the private university libraries in Bangladesh. Moreover, the process of the expansion of technology is very slow in the private university libraries. It is observed that though the number of the students in private universities is increasing every year the infrastructural and technological facilities are not increasing considerably. So, the libraries are failing to play the expected role in achieving their respective targets.

The technological development of the university libraries will be stimulated if the government and private university administration come forward to help libraries for adopting information technologies.

At the end it should be stated that enough attempts have been made to collect information concerning information technologies used in Bangladesh. Materials so collected have been well organized, properly analyzed and fully digested. As such it is found that the importance of information technologies has been understood not doubt by many librarians, researchers, educationists and intellectuals in the country. Many libraries have already started to use information technologies in their libraries as shown in the relevant chapters. The problems in the use of information technologies have been thoroughly discussed in the relevant chapter. Whenever there are problems there must be solutions, applicable to Bangladesh. As such this researcher suggested the most important solutions. If these solutions are adopted and logically materialized it can be hoped that library and information services of private universities of Bangladesh like other university libraries of developed and developing countries will be computerized, automated, and connected with global information network. The researcher is very much optimistic and confident about the implementation of the above-mentioned guidelines.

Limitations of the study

The study experienced the following problems:

i) The study was confined within selected public and private university libraries in Bangladesh. Wider

use of university libraries might be provided for more useful information.

ii) Only four public universities and six private universities were selected for this study, although the country had 78 public and private universities.

iii) Budget of private university libraries surveyed was better compared to public universities surveyed in terms of organizing modern IT-based library. A good budget of public university libraries might have brought good result for modernizing the same libraries.

iv) The size of the sample both of users and libraries might have limited the scope of the study. A larger sample size would definitely provide more specific information for IT-based library systems and services of universities.

v) A purposeful selection of university libraries might have raised the question of bias. However, before making the selection, a technical approach was taken up to minimize the bias in selecting university libraries.

vi) The cost benefit analysis was not done during development of the proposed model. More studies on users and university libraries would have exposed a better picture.

vii) The universities located in Dhaka and Mymensingh were covered as sample while other universities located in other places of the country had not been accommodated in the study.

viii) The researcher had faced a number of problems during the conduction of proposed research. The sources of information needed for the study, in some particular cases, were also not duly available as the subject matter of the study was vast. The researcher had to face some bitter experience in collecting information. In some cases, information was manipulated by some responsive librarians, which was later corrected by further communication. These sort of things had hampered the research to some extent.

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Bangladesh. Dhaka: Department of Library and Information
Science, University of Dhaka (unpublished M.Phil. thesis).

Index

A

Audiovisual and IT section, 353
Automated, 207, 257, 266
Automation, 228, 229, 230, 315, 362
Awareness of holding journals, 299
Awareness of online databases, 302
Ayesha Abed Library, 216, 218, 220

B

Background of the study, 23
BALID, 69, 258, 392, 409, 422
Bangabandhu Sheikh Mujib Medical University (BSMMU), 58, 110
Bangladesh, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 41, 42, 44, 45, 46, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, 59, 60, 61, 62, 63, 65, 66, 67, 68, 69, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 94, 96, 97, 98, 99, 100, 101, 102, 103, 104, 106, 107, 108, 110, 111, 113, 114, 115, 116, 117, 118, 126, 127, 128, 130, 131, 132, 133, 134, 135, 137, 140, 142, 144, 145, 147, 148, 149, 150, 152, 155, 156, 160, 161, 162, 168, 170, 173, 176, 177, 178, 180, 181, 182, 190, 196, 197, 198, 202, 203, 212, 213, 214, 220, 221, 222, 231, 234, 240, 242, 245, 246, 253, 255, 258, 259, 260, 261, 262, 264, 266, 268, 269, 279, 293, 314, 315, 316, 320, 324, 329, 331, 332, 333, 337, 346, 354, 369, 371, 373, 377, 378, 379, 383, 390, 392, 393, 394, 395, 396, 398, 399, 400, 401, 402, 403, 404, 406, 407, 408, 409, 410, 412, 413, 414, 415, 416, 417, 418, 419, 422, 423
Bangladesh Academy of Sciences (BAS), 170, 214, 220, 234, 279, 333, 402
Bangladesh Agricultural Research Council (BARC), 133
Bangladesh Agricultural University (BAU), 12, 15, 56, 117, 130, 131, 160, 177, 178, 220, 260, 261, 262, 264, 266, 268, 269, 293
Bangladesh Agricultural University Library, 177
Bangladesh Association of Librarians, Information Scientists and Documentalists (BALID), 69, 258, 392, 409
Bangladesh Bank (BB), 29, 407
Bangladesh Bureau of Educational Information and Statistics (BANBEIS), 79, 82, 85
Bangladesh Bureau of Statistics (BBS), 27
Bangladesh Commission Report, 100
Bangladesh Fisheries Research Institute (BFRI), 132
Bangladesh INASP-PERI Consortium (BIPC), 171, 176, 190, 214, 234, 279, 333, 401
Bangladesh Institute of Management (BIM), 55
Bangladesh Institute of Nuclear Agriculture (BINA), 132

426

E

F

K

L

M

N

O

P

R

S

V

W

X

Y

Z