A Study on Innovative Uses of ICT in Distance Education in Bangladesh: Design, Delivery and Evaluation

Monira Begum
Institute of Education & Research
University of Dhaka

Thesis submitted for the degree of Doctor of Philosophy
Of
University of Dhaka

Supervisor
Prof. (Dr.) Iqbal Aziz Muttaqi
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May, 20

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LETTER OF CERTIFICATION AS TO THE ORIGINALITY OF THE WORK BY THE SUPERVISOR

This is to certify that the present research work was conducted and completed by the PhD student, Monira Begum under my guidance and that it is an original work done by the researcher. It was not submitted anywhere else for any degree.

Iqbal Aziz Muttaqi

Professor (Dr.) Iqbal Aziz Muttaqi

Professor

IER, DU

ABSTRACT

The present research study was conducted under the guidance of Prof. Iqbal Aziz Muttaqi, IER, DU; on the innovative uses of ICT in distance teacher education in Bangladesh. It mainly brought to focus the implementation stages of education policy issues in general where use of some sort of technology was advocated and specifically getting further to the areas on use of Instructional Design related to production and use of text materials like radio-TV lessons and printed text materials for distance education. The specific focal point of the research was to make an evaluation on the actual stage continuation of the sequence of policy -design- delivery- evaluation, related to the innovative uses of technology in school science teaching and distance teacher education.

The title of the study was:

A Study on Innovative Uses of ICT in Distance Education in Bangladesh: Design, Delivery and Evaluation.

The major aim of the research work was a broad-view review of the situation from 1948-2010 to suggest to future deliverers of the newly formulated BEd programme (introduced nationally in 2007 through TQI-SEP) at BOU about

1. what technology aspects of the programme can be incorporated;
2. what should be replicated ,
3. what aspects should be altered or discontinued ,
4. Which aspects should be added to face the learners' ICT-demand of the time.

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It has also to do with some recommendations on the implementation stage of National Education Policy, 2010.

Being a document-based research many considerations were explored when deciding on how the data would be collected from the vast list of documents and with what instruments. Finally most of the data were collected by painstakingly reading the whole of each document, many times, then selecting the appropriate portion by coded data method of grounded theory. Way of tracking documents were designed and constructed with great care to facilitate authentic data collection. The whole methodology was to lead to a

grounded theory formulation by way of evaluation of data coded in two successive levels– Selectively Coded Data (SCD) and Theoretically Coded Data (TCD).

An appropriate ID model, learner's model were developed as a result of the researcher's evaluation, which lead to the formulation of a "grounded theory".

A good number of recommendations were made.

The ID model, learning model and the grounded theory model formulated by this study need to be tested by future researchers.

DEDICATION

I start in the name of-ALLAH, the most merciful,

and dedicate this piece of work-

To my late father, who being an orphan gold medalist wanted nothing but excellent academic result coupled with commendable moral values reflected in his nine children.

To my elderly mother, whose limitless care, love and affection for her children finally earned her the title of Ratnagorva in the year 2009.

To Zita & Mirza, my two children who suffered so much because of their mother's daily long term absence in their formative lives since the age of three months. To my son-in-law Rumi, for supporting me in his own very positive style.

To my siblings, who showered me with care, love during my whole adulthood including the last eight years of my sickness.

To two of my nephews Ryan & Zia, who constantly and verbally pushed me in this "almost never ending work".

To some of my friends and colleagues, who encouragement me continuously in my academic advancement, if there is any. They know best who they are.

To Dr. Asha Kanwar, Indian renowned distance educationist, who told me during one collaborative research work at Beijing that seeing me she understands why it is difficult for women to be in research.

To my husband, whose unique way of helping me gave me enormous motivation and encouragement to go forward throughout my whole professional work period.

But after preparing such an exhaustive list of people who are dear to me and cared for my professional work, I am beyond doubt thankful to almighty ALLAH, for keeping me fit of doing his small piece of work, whose ultimate research value though is unknown to me at present.

And I thank HIM again for presenting me with a shining gift – my grand-daughter Aadrita (Rheeti), whose far away presence encouraged me to work with my laptop every day with renewed "*vigeur*".

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I am ever respectful of my supervisor, Prof. (Dr.) Iqbal Aziz Muttaqi, Professor at IER, DU, who gave me all the academic freedom to conduct this research study in quite extended time period because he understood my professional engagement at my work place demanded lot of time and attention from me.

I must pay respect to my one-time senior at Rokeya Hall and now the Director of IER, Prof. Salma Akhter, for her ever encouraging words and soft behavior with me despite her natural teacher-type attitude towards all other students.

I acknowledge the help of all the administrators and technical officers of the institutes that I have taken as the population institutes in this research, they always helped me by participating in all un-scheduled interviews; for their kindness and collaboration, for inspiring me in so many instances.

I express my gratitude to all my present and past BEd students, specially the batches who patiently filled my questionnaires and who helped me through the two collaborative research studies, supported by Unesco, COL in 1998 and 2001 respectively.

I express my gratitude to all who helped me with interviews, providing me with information on documents; for their energy, enthusiasm and all that I learnt from them.

To the founding Vice Chancellor of BOU, Prof. Shamsher Ali, who inspired me to work in the field of distance education by giving me all the academic freedom and power I needed during BOU's initial academic period.

To all the staff at the School of Education of BOU (the institute whom I fondly refer to as my third child); some of these staff started their professional work at SoE with amazement and became the invisible and unrecognized icons of their respective fields in time.

Monira Begum

ACRONYMS

ACCS-	Audio Console Control Sets
ADB-	Asian Development Bank
ADP-	Annual Development Plan
ALN-	Asynchronous Learning Network
AVEC-	Audio Visual Education Centre
BANBEIS-	BAN Bureau of Educational Information & Statistics
BBS-	Bulletin Board System
BCC	Bangladesh Computer Council
BEd-	Bachelor of Education
BIDE-	Bangladesh Institute of Distance Education
BOU-	Bangladesh Open University
BR-	Bangladesh Radio
BTV-	Bangladesh Television
BZS-	Barisal Zilla School
CBA-	Commonwealth Broadcasting Association
CD-ROMS-	Compact Disc-Read Only Memory
COL-	Commonwealth of Learning
DCM-	Dick-Carey Model
DE-	Distance Education
ECNEC	Executive Committee of National Economic Council
EEC-	Education Extension Centre
FDC-	Film Development Corporation
FGD-	Focus Group Discussion
FY-	Financial Year
GOB-	Government of Bangladesh

GOEP-	Government of East Pakistan
GRNDTH-	Grounded Theory
ICT-	Information & Communication Technology
ID-	Instructional Design
IGNOU-	Indira Gandhi National Open University
IRI-	Interactive Radio Instruction
LAN-	Local Area Network
LE-	Learning Environment
LS-	Learner Space
LTH-	Learning Theories
MEd	Master of Education
MoSICT-	Ministry of Science & Information Communication Technology
MRQ-	Main Research Question
NAEM	National Academy of Educational Management
NEC-	National Economic Council
NGO-	Non Government Organisation
NHK-	Japanese Broadcasting Station
NIEMT-	National Institute of Educational Media & Technology
NIER-	National Institute of Education & Research
ODE-	Open & Distance Education
ODL-	Open & Distance Learning
PA-	Policy Anomaly
PCR-	Project Completion Report
PD-	Picture Data
PDPA-	Proforma for Development Project of AVEC
PI-	Policy Implementation

POL-	Policy
PP-	Project Proposal
QLD-	Qualitative Data
RBG-	Research in Bangladesh
RES-	Research
RRC-	Regional Resource Centre
SBP-	School Broadcast Programme
SCD-	Selectively Coded Data
SESIP-	Secondary Education Sector Improvement Project
SFYP-	Second Five Year Plan
SoE-	School of Education
TAPP-	Technical Assistance Project Proposal
TCD-	Theoretically Coded Data
TECH-	Technology
TQI-SEP-	Teaching Quality Improvement-Secondary Education Project
TTC-	Teachers Training College
TV-	Television
UNESCO-	United Nations Education Scientific & Cultural Organisation
UGC-	University Grants Commission
WB-	World Bank
WEF-	With Effect From
WWII-	World War Two

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CHAPTER ONE

INTRODUCTION

1.1- Introduction to the Study

The present study is an attempt to draw a complete picture of the ground state- through-present picture about recommendation- design-delivery-evaluation stages of policy and technological information that is the basis of existing national foundation of 'distance mode secondary education programmes'. This evaluative study report is hoped to create opportunities for better shaping of the related area in the implementation stage of the coming National Educational Policy(2009) as well as 2009 National ICT policy.

The study tried to identify the impact of the instructional design strategy on secondary science students and the trainees of distance teacher education programme: BEd. Specifically it focuses on evaluation of policy implementation related to creation of learner space and learning environment in the ICT-based course materials.

An ever growing surge of active global interest in the fields of learning, media and communication is making it mandatory to formulate appropriate policies related to: overall education, ICT-based education, ICT-enveloped instructional design for all kinds of teaching aids and to serve students better in a non-traditional setting like distance education. This need will only increase as new media and technologies are continuously introduced.

1.1.1- Background of the National Teacher Education Programme

By Face-To-Face Mode

Formal education system evolved around the European system of schooling and it was introduced in the first quarter of nineteenth century in this sub-continent. Teachers had to teach a good number of students and on a certain subjects. With the advent of time students were set to be prepared for the nation and it became evident that teachers needed to be trained to manage both the academic and the administrative part of the classroom situation.

With a view to provide training to teachers first training school was established in the region in 1857 at Dacca (vernacular/elementary school). In 1869 and 1882 two more schools were established at Comilla and Rangpur respectively but in 1885 the school at Comilla was transferred to Chittagong (Report, 1974).

Indian (Hunter) Education Commission of 1882 recommended separate teacher education programmes for elementary and secondary teachers; recommending one year training programme for secondary teachers. Later on in the Indian sub-continent six training colleges were established during the period 1886 to 1894 for secondary school teachers

(Sharma,2001). In 1917 Sadler Commission emphasized the importance of training and research on secondary teacher training.

The first teacher-training school in our part of the sub-continent-called normal school, and which later came under Pakistan was established in Dacca in 1905. In fact it was upgraded from its original form of vernacular school. At that time it was situated adjacent to the practicing school, Armanitola Government School. In 1920 it was transferred in respect of its academic courses from Calcutta University to Dacca University. An impression on teaching condition of this Armanitola School can be gathered from the March 1914 Convocation Speech of the then vice chancellor, Sir Asutosh Mookerjee-

> Since 1906, the schools and colleges throughout this province have been re-organised and that in many cases the re-organisation has been of such a fundamental and far-reaching character as to indicate a veritable rebirth of the Institutions concerned. The teaching staff has been improved and strengthened all round, both qualitatively and quantitatively (Annual Convocation, 1914).

Up to 1956 normal schools used to train lower secondary teachers by a two year training programme and the certificate was called Vernacular Mastership. According to the recommendation of the 1952 Committee normal schools were converted to junior training colleges in 1956. Up to 1966 these institutions were free to formulate the curriculum, to set examination policies. About fifty teachers a year were trained in the courses.

The First Five Year Plan of Pakistan recommended the up-gradation of the course to call it a Certificate of Teaching. At present the last sentence of the first paragraph of page 561 of the Plan reveals short of farsightedness - At present about 500 students receive this degree every year. With funds provided for strengthening and improving the existing training colleges in West Pakistan, and the opening of two new colleges in East Pakistan, about 800 new graduate teachers will be trained annually.

The last sentence of the same paragraph of this FFYP of Pakistan made some wrong prediction-

> This is considered sufficient to meet the country's requirement of trained teachers.

If the number 800 of new teacher-graduates was sufficient in the 1950s as mentioned above then there wouldn't be any need for a new programme like TQI-SEP BEd in 2007. In 1972 the junior training colleges were transformed into colleges of education and the study period was fixed at three years (Report, 1974).

At present, secondary teacher education or BEd is one of the important sub-sectors of the education system of Bangladesh and it has a total of (government and private) 99 teacher training colleges with around 1,250 teacher trainers. The gross enrollment of these colleges

stood at 18,156 in 2005. Institute of Education and Research of Dhaka University used to offer Diploma in Education, they stopped it to introduce a three-year BEd Honours Programme, which was later transformed into a four year graduation programme. The Education Commission Report of 2010 recommends introduction of four year teacher education programme.

By Distance Learning Mode

The professional education/training provided to higher, secondary or primary teachers to enhance their teaching skills by use of distance education or open and distance learning delivery system is termed as distance teacher education. Now- a- days one of the significant ways of strengthening the teaching profession is to use distance education or open and distance learning mode. This mode has widely been used in Africa and South Asia as part of the regular system of initial teacher training, to support curriculum reform, to offer continuing professional development to teachers, and to prepare them for new roles as head teachers, administrators or inspectors, or as teachers' college lecturers.

In institutions in a number of developing countries- like, in our country, at Bangladesh Open University, distance education programmes are quite popular as a second chance degree oriented study. Printed course material is the main text and it is supplemented by television and radio enrichment lessons. A number of face-to-face tutorial sessions are integrated into the system to provide two way real-time interaction for the learners.

Bangladesh Open University (BOU) established by an act of National Parliament (with partial funding of Asian Development Bank (ADB)), through the School of Education (SoE) offers MEd, BEd and CEd programmes by distance mode since 1992. Running of BEd is the result of passing out of an Act in the Parliament and also the merger of an earlier government and donor funded project, Bangladesh Institute of Distance Education (BIDE); BIDE offered BEd by distance mode on experimental basis for three academic years since 1985.

Since 2007, the School of Education (SoE), one of the six faculties of BOU directed by a government order is offering a new BEd whose curriculum was prepared by a government-donor funded project: Secondary Education Sector Improvement Project (SESIP). The reason behind this compulsion is government's decision to offer the same teacher education curriculum nationwide; by both face-to-face and distance mode. Among the innumerable private universities, until recently approximately ten private universities used to offer their own BEd/MEd programmes (Unesco, 2005). University Grants Commission (UGC) recently put to stop this practice as it was not sure of the quality of these programmes.

A range of organizational structures have been used here. International agencies may have influenced teacher education and the use of distance education within it. Both the Commonwealth Of Learning and its francophone equivalent, have been involved in the

development of teacher education programmes using distance education, and have been able to share expertise internationally in their execution. The World Bank has sought to influence policy on teacher education while several bilateral aid agencies in Europe have funded distance-education projects for teachers in Africa. They have brought to their funding certain conditions.

Renowned distance educator Desmond Keegan (1996) says-

Distance education is characterised by five elements:

i) the separation of teacher and learner,

ii) the planning and preparation of materials under the influence of an educational organization,

iii) the use of technical media to unite teacher and learner,

iv) the provision of two-way communication, and

v) the absence of the learning group.

Keegan's first element was later found to be not very effective and at present this 'separation' element is minimized by introducing computer-based synchronous and asynchronous interaction in distance education programmes. Just a few years back from now it was an accepted fact that the hallmarks of distance education are the separation of teacher and learner in real space and /or time, the volitional control of learning by the student rather than the distant instructor and noncontiguous communication between student and teacher, mediated by print or some form of technology (Sherry, 1996).The traditional definition of distance education is though fast being eroded as new technological developments challenge educators to reconceptualise the idea of schooling and lifelong learning. At the same time, interest in the unlimited possibilities of individualized distance learning is growing with the development of each new communication technology. Educational technologists agree that it is the systematic design of instruction which should drive the development of distance learning.

Internationally acclaimed distance educators have identified different characteristics of distance education, which eventually resulted in the emergence of a number of models in each field, such as use of technology, student interaction, evaluation, etc.

In the beginning period of her academic work at BOU the researcher was convinced that the course material production model of BOU followed Otto Peters model of 'industrialisation'. But with time she found out that no Western model is rigorously followed by faculty members of the School of Education of BOU. Foe enriching her own knowledge she explored quite a few other models. For this study she found that a model-based view which

should be helpful to ananlyse the data of this research may have some resemblance to one of those presented by Hilary Perraton (1992) in his three models-

1st Model- To provide education outside school, usually by means of correspondence courses for individual students working at home,

2nd Model- To use similar materials for groups of students in study centres, offering something like a school but at reduced costs,

3rd Model- To use distance-teaching methods within conventional schools in order to raise their quality.

It becomes evident to the researcher that the 1st Model is based on the long established correspondence system in which learners are completely separated from the instructors or teachers, and instruction is provided purely by means of correspondence courses. Studies showed that this model was not effective. This model has some inherent problems e.g. lack of predisposition toward learning, lack of access to libraries and absence of motivation. The difficulties encountered by the first model, according to Perraton, led to the development of the 2nd Model which provided study centres for groups of students, and the burden of instruction was carried out by correspondence courses with some radio support in some places. In the 3rd Model, distance teaching system is used to enhance the quality of conventional education. Broadcasting was extensively used to achieve this in some countries and there are countries such as American Samoa and El Salvador where television was used as an important component of conventional or traditional education. As reinforcing the quality and capacity of formal education has been an area of concern, distance teaching system is quite often used to enhance conventional curricula and instruction. Perraton's 2nd and 3rd models used radio and television extensively.

The researcher sees through her professional work that distance education up to the recent past was defined as instruction through print or electronic communications media to persons engaged in planned learning in a place or time different from that of the instructor or instructors and with the advent of technology the situation is fast changing. The change is brought in effectively with the use of technology in the form of instructional technology.

1.1.2- Innovative Uses of Instructional Technology in the Delivery of Distance Education

Information and communication technology is an embracing concept that includes the systems, processes and people that are involved with technologically mediated communication. When products are thoughtfully blended with subject matter content (such as mathematics or science concepts or in open learning programmes) for a specific audience in a specific educational context (such as a school or any open university), one is using

"*educational technology*". Educational technology is a creative blending of *'idea'* and *'product'* technologies with subject-matter content in order to engender and improve teaching and learning processes. Educational technology is often associated with the terms instructional technology or learning technology. '*Product'* technologies are tangible; for example, computer hardware or software. '*Idea*' technologies are cognitive frameworks or schemes. Technology is fast becoming a compelling force that needs to be coupled with the curriculum to create an engaged learning atmosphere that allows learners to become skilled technicians with an endless passion for learning. Reading Internet-based research papers she sees that with the use of technology students become engaged learners who are responsible for their own learning. They engage in the learning process by problem solving, reflecting, synthesizing, evaluating, and continuously applying their new skills.

As use of technology in the field of education is termed as instructional technology a suitable definition was found in that given by Berger and Kam (Berger, Kam, 1996) –

> The systematic development of instructional specifications using learning and instructional theory to ensure the quality of instruction. It is the process of analysis of learning needs and goals and the development of a delivery system to meet those needs. It includes development of instructional materials and activities; and tryout and evaluation of all instruction and learner activities.

Ferrier's (Ferrier, 2002) following definition of technology is found suitable by the researcher for own work-

> The tools which people use to aid their action in life (Ferrier, 2002), or as a design for an instrumental action that reduces the uncertainty in the cause-effect relationship involved in achieving a desired outcome.

This definition recognises an aspect of reducing uncertainty and hence the important role information plays. Once information-seeking activities have reduced the uncertainty about an innovation's expected consequences to an acceptable level for the individual, a decision concerning acceptance or rejection will be made.

The researcher found that the above definition could be added to what Danielle, one time Assistant Secretary General of Unesco (2001-2004) said about the importance of technology as some concrete ideas can be formed about the insertion of instructional technology in preparing course materials for distance learners – We are living in a world of people and machines. Good use of technology always involves people and their social systems.

Professional knowledge, field level work experience and document reading the researcher found that there are two primary forms of communication utilised to deliver instruction to learners-synchronous and asynchronous. Asynchronous distance education is recognized for the great advantage of allowing time for reflection before responding (Bonk & Cummings, 1998), thereby encouraging critical thinking. The main distinction between the two is whether teachers and learners are participating at the same time or not. Attendance at numerous international level conferences the researcher found that distance education

programmes based on asynchronous methods use recorded instructional materials. These types of technologies allow participants to be separated in time and distance from the delivery of instruction. Thus, telecommunications systems, such as broadcast radio, television (including cable), or electronically stored media such as video, audio, and computer software are among the technologies that utilize asynchronous communication.

As is seen that the world wide use of technology is increasing at an incredible speed it is found necessary for the sake of the present study to scan documents and get a complete picture of use of technology in national level education.

The researcher found that Bates' (Bates, 1997) argument regarding decision-making on the choice of technology based on an analysis of questions are well justified. His questions were-

a. How accessible is a particular technology for learners, how flexible is it for a particular target group?
b. What is the cost structure of each technology?
c. What kinds of learning are needed? What instructional approaches will best meet these needs?
d. What are the best technologies for supporting this teaching and learning?
e. What kind of interaction does the technology enable?

It was traced that Haddad and Draxler (2000) identified at least five levels of technology use in education: presentation, demonstration, drill and practice, interaction, and collaboration. Table 1.1.2.1 classifies some of these forms along with their level of interactivity in education system.

Table 1.1.2.1: ICTs and their Potential for Education (Haddad, 2000)

Technology	Outreach	Flexibility	Sensorial Stimulation	Real –life Interactivity
Radio	High	Limited	Audio only	Limited
Television	High	Limited	Audiovisual	Limited
Video	Low	High	Audiovisual	Limited
Computer	Low	High	Audiovisual	High
Internet	Highest	High	Audiovisual	Highest

With time the acceptance of these educational technologies by the instructional designers facilitated their inclusion in the preparation of distance education course components.

Learning theories play important role in the inclusion of Instructional Design (ID). Among the prominent theories at present behaviorism and constructivism play significant role in the Instructional Design process.

Reaching this point of fixing importance on proper learning theories at this point it seems necessary to the researcher to find the actual presence of them in the national level work.

1.1.3- Innovative Uses of Technology in Instructional Design at National Level

A report prepared during project period of Bangladesh Open University defines instructional design as:

> Instructional design is the process of designing materials for effective learning. To be effective materials must satisfy criteria of several kinds- structure, format, style, presentation; all contribute to quality as well as academic content. Transforming content into a tool for effective communication with learners is the job of instructional design (BOU-CS 28).

When the researcher prepares a comparative picture in between the situation prevailing at her won work place BOU and developed or even developing countries she sees it clearly that-

a. The rapid development of information and communication technologies (ICTs) and the move towards more knowledge intensive, interdependent and globalised societies create new challenges and opportunities for the design and delivery of education.

b. Policy makers at various levels and across a range of sectors, including education, believe that new technologies can make a significant contribution in solving difficult and pressing problems. Unesco also gives a similar picture (Unesco, 2000).

c. There is another side of this ever increasing inclusion- in distance education which is prevalent in developing countries at least- it is far more important to get these processes of pedagogical design and development right than to focus too much on the hard technologies. The hard technologies will change, and this is why distance education systems must ensure that the processes of design, development and delivery are robust and that they can accommodate short-term changes in hard technologies.

It isknown that at the time when globally instructional design was in its infancy, the behaviourist approach to learning was very prominent. With the advent of the Second World

War, there was a great need to train hundreds of thousands of military personnel in a short span of time. Prior to this, the use of specialized teaching machines was used as a method of standerdising instruction and training. This method was used in conjunction with the earlier work undertaken by Ralph Tyler on learning objectives, allowing for vast numbers of personnel to be trained in a standardized manner and in a relatively short time frame. It is thought that the heavy investment of the government into training, research and development was credited with the USA's victory in 1945.According to Leigh this in turn led to further research and development into the underpinnings or learning cognition and instruction (Leigh, 2002).

Following the post war boom, the 1950's brought about further development in theoretical models of learning. Exponents at the time included Skinner and Bloom. The general systems theory of biological interactions attributed to Ludwig von Bertalanffy, was combined together with Bloom's taxonomy (Lefrancois, 1991) and allowed for development of a systems approach to instructional and organizational development. Planners were then able to match content and delivery of instruction for organizations, individuals and groups. It was interesting to find that with the advent of the space race, the focus shifted from programme development to entire curriculum development. In 1962 Robert Glaser combined the works of previous researchers and introduced the concept of instructional design. He developed a model which linked the analysis undertaken about the learner to the design and development of the required curriculum (Leigh, 2002).

Combining this Western theoretical knowledge with her own personal job experience helped the researcher to see that the theoretical basis on which instructional models is based affects not only the way in which information is communicated to the student, but also the way in which the student makes sense and constructs new knowledge from the information which is presented. She found that the constructivist perspective describes learning as a change in meaning constructed from experience (Newby, 1996). Constructivists believe that- 'knowledge and truth are constructed by people and do not exist outside the human mind' (Duffy and Joanssen, 1991). Central to the tenet of constructivism is that learning is an active process. Information may be imposed, but understanding cannot be, for it must come from within.

Vygotsky's (Vygotsky, 1984) theory of social constructivism, as opposed to Piaget's individualistic approach to constructivism, emphasizing the interaction of learners with others in cognitive development is very important for distance learners. Vygotsky's theoretical concept of the one of proximal development that learning is directly related to social development is quite appropriates for Bangladeshi distance learners.

It became clear to the researcher that constructivist learning environment is characterized by –

a. Shared knowledge among teachers and students,

b. Shared authority and responsibility among teachers and students,

c. Teacher's new role as guide in instruction,

d. Heterogeneous and small groupings of students (Tam, 2000).

The researcher became convinced to explore the national situation and form precise idea about ID in the national filed.

Design-Delivery-Evaluation Based ID work

The following functions of an ID designer explains the reality of ID -

a. Instructional design and development must be based upon some theory of learning and/or cognition, effective design is possible only if the developer has developed reflexive awareness of the theoretical basis underlying the design.

b. From a number of suitable propositions a distance educator/instructional designer should construct a set of instructional principles which can then guide the practice of teaching and the design of learning environments in distance education.

c. The designer must confirm that design practice must do more than merely accommodate the constructivist perspectives', they should also support the creation of powerful learning environments that can optimize the values of the underlying epistemological principles.

The learning theories related to the use of innovative technology in the instructional design of distance education is to be based on actual passage through the three broad stages; namely: mass instruction methods, individualized-learning methods and group learning.

And in this respect the researcher finds Elton's Learning Model elaborate and realistic. One of the first people to classify learning-teaching methods was Lewis Elton, Britain's first professor of educational technology (RGU, 1996). In a seminal paper presented at the 1977 Annual Conference of the Association for Educational and Training Technology, he described the three classes as 'the dependent mode, the independent mode and the inter-dependent mode', reflecting the radically different roles of the student in each. He also contended that the entire post-war evolution of educational technology could be described in terms of the development of these areas, as shown in Figure 1.1.3.1.

While thinking of working in the area of instructional design related to distance education tried out in Bangladesh perhaps Elton model is perhaps one of the best fit. It gives one clear idea as to the evolution of use of technology: in the education field of most of the developing nations international policies are often forced on without much needed groundwork.

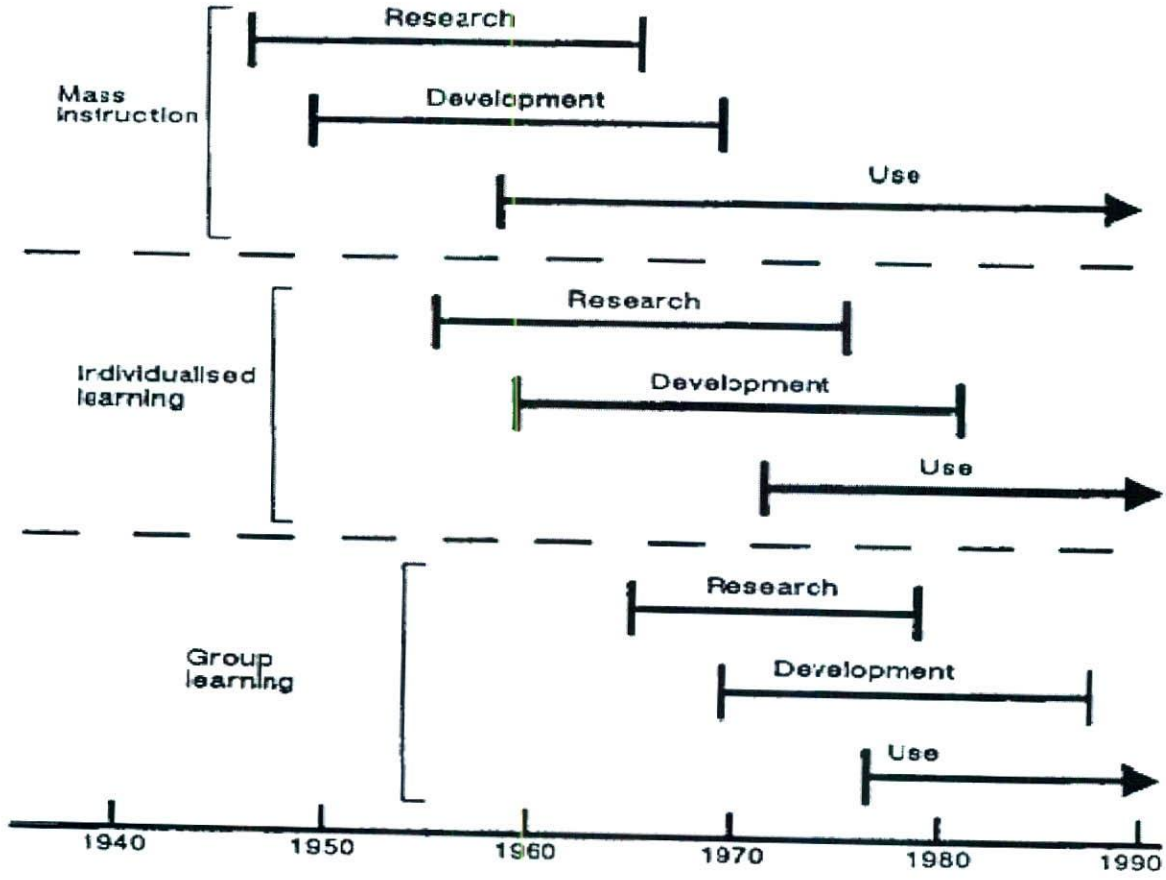


Figure 1.1.3.1: The Elton Model of 'Technology in Education'

Elton identified that the use of technology in education (in the developed world) had undergone a progressive change of emphasis since the end of the Second World War, when it first emerged as a discipline in its own right. Initially there was a concentration on the techniques of 'mass instruction', then a move towards 'individualized learning', and finally, during more recent years, a move towards 'group learning'. In each case, he identified three broad overlapping stages in the general development: research phase, development phase and use phase. Some important outcomes were the development of basic mass-instruction tools like the overhead projector and 35mm slide projector, and the increasingly widespread use of 'hardware-based' techniques such as film, radio and television broadcasting and closed-circuit television.

But, according to Elton, 'mass instruction' movement failed to live up to its early promise, it was totally unsuitable for achieving many higher-cognitive objectives, and were almost completely passive, enabling virtually no student involvement to take place. Nevertheless, educational broadcasting worldwide continues to grow in importance. Various other techniques and hardware systems that come under the general heading of 'mass instruction'

continue to constitute a very important section of the educational armoury available to the modern teacher.

B.F.Skinner's (Burrhus Frederick Skinner) elaboration of the theory of reinforcement and his advocacy of its application to learning helped to establish the behaviorism and Programmed Instruction Movement caught the attention of the researcher. Programmed Instruction is characterized by clearly stated behavioral objectives, small frames of instruction, self-pacing, active learner response to inserted questions, and immediate feedback regarding the correctness of a response. Individualised instruction in essence replaces the teacher with systematic or programmed materials. It can be instruction bases, print-based, computer-based, or can use other media as long as the instruction is based on the concepts listed here. It is linear, in that the author of the materials decided what step to present next, and that step is presented, no matter what the learner wants. Although logical subject matter is easier to individualise into programmed materials, researchers have not found any subject that could not be programmed. The researcher found that in 1958, Skinner built a rote-and-drill teaching machine and individualised instruction was originally presented in book form. In order to prevent students from looking at the answers in the books ahead of time, Programme Instruction became later automated by inserting it into a teaching machine. Skinner's work has also had wide influences on other fields, such as Organisational Development. Skinner was also interested in a teaching machine. He conceptualized a teaching machine for the classroom for use by individual students (Clark, 2000). Skinner's elaboration of the theory of reinforcement and his advocacy of its application to learning helped to establish the Behaviorism and Programmed Instruction movement.

1.1.4- Design-Delivery-Evaluation stages in the Preparation of Course Materials of Open Learning

Transforming content into a tool for effective communication with learners is the job of instructional design. Instructional design to her becomes the process of designing materials for effective learning. And to be effective for distance learning, materials must satisfy criteria of several kinds: structure, format, style, presentation all contribute to quality as well as academic content. Although ID models and processes abound in the developed world the majority there follow the same basic stages of -design, delivery/development, evaluation and revision.

The design stage focuses on gathering information to help understand the instructional gap between what is and what should be. The steps include defining the problem or need, understanding the audience, and identifying instructional goals and objectives.

In the delivery preceded by development stage one is to create a content outline based on the instructional problem, the audience analysis, instructional goals and objectives, and an

understanding of the desired course content. Next, the instructor should review existing materials. Perhaps the greatest challenge facing the distance educator is creating student-relevant examples.

The primary purpose of evaluation is to provide information to decision makers. There are two approaches to evaluation: formative and summative. There is room for improvement in even the most carefully developed distance-delivered course, and the need for revision should be anticipated (Willis, 1993).

Among a number of characteristics identified by various authors, the following two seem to the present researcher to bear significance for the learning process:

a. 'Good' Problems- Constructivist instruction asks learners to use their knowledge to solve problems that are meaningful and realistically complex. The problems provide the context for the learners to apply their knowledge and to take ownership of their learning. Good problems are required to stimulate the exploration and reflection necessary for knowledge construction.

b. Collaboration-The constructivist perspective supports that learners learn through interaction with others. Learners work together as peers, applying their combined knowledge to the solution of the problem. The dialogue that results from this combined effort provides learners with the opportunity to test and refine their understanding in an ongoing process.

It was found that induction of learner/learning space and learning environment is very important in the making of distance learning course material as:

a. 'Space', whether physical or virtual, can have a significant impact on learning. 'Learner Space'(LS) focuses on how learner expectations influence such spaces, the principles and activities that facilitate learning, and the role of technology from the perspective of those who create learning environments: faculty, learning technologists, administrators. The effective design of 'learner spaces', whether a classroom, a laboratory, a library or a distance education setting like print, radio, TV lessons- can enhance learning. The "design of learner spaces" goes beyond the physical to include the virtual. It is a combination of technology, pedagogy, learning science and physical space.

b. In a "learning environment" (LE), there is always some stimulus or goal of learning. In Dewey's term, it is the 'problematic' that leads to and is the organizer for learning (Dewey, 1938).

There are two primary forms of communication utilised to deliver instruction--synchronous and asynchronous. The main distinction between the two is whether teachers and learners are participating at the same time or not. Distance programmes based on asynchronous methods use recorded instructional materials. These types of technologies allow participants to be separated in time and distance from the delivery of instruction. Thus, telecommunications systems, such as broadcast television (including cable), or electronically stored media such as

video, audio, and computer software are among the technologies that utilize asynchronous communication.

According to Gagne instruction is normally regarded as a system of independent elements that facilitate intentional learning (Gagne, et al., 2005). Through the two theories- behaviorist and constructivist, effective designers usually start with empirical knowledge: objects, events, and practices which mirror the everyday environment of their designated learners. Then, with a firm theoretical grounding, they develop a presentation which enables learners to construct appropriate new knowledge by interacting with the instruction. New developments in technology stimulate practitioners of education system to return to design and consider how new technological tools can help improve the current status of education. It is evident that potential of each technology varies according to how it is used and by whom.

It is seen by the researcher that unless technologies are integrated as part of a profound shift in the education process from teaching to learning and from supervision to facilitation of learning, they are going to remain a marginal and costly add-on (Haddad, 1999). This belief that technology is an "add-on" encourages the thinking that technology tries to bring about more efficiency, equity, and cost-effectiveness without helping towards the realization of the more important systemic changes leading to structural thinking and the re-engineering of the entire education system.

Researcher finds that the task of exploring the national situation becomes more focused accepting the comment of Masood (Masood, 2004)-

In the1960s and 1970s, the educational technology field was heavily oriented towards applying behaviourist notions to the design of instruction. At the same time, cognitive information processing theory was emerging as the dominant paradigm in educational psychology. From the 1960s to 1980s, Gagné's evolving "theory" of instruction, integrated cognitive with behavioral views (Reiser, 2002). In the 1980s and 1990s, computer technology dominated the field, while in educational psychology, theories of constructivism and situated cognition offered new ways of thinking about instruction. More recently, academia has become highly dependent on the Internet for administrative purposes as well as for teaching and research.

Thoroughly analysing the national events the rationale of the study is chalked out in the next section.

1.2- Rationale of the Present Study

With the necessary theoretical underpinning brought out till the Section 1.1.3, the present study targeted its focus on the following priority areas for a complete analysis:

National policy formulation and their application on the use of instructional technology in distance education. The researcher became interested to explore a lead question-

Was there Policy Coherence in the Innovative uses of Technology for Distance Education at National Level?

The formulation of the rationale for the present research asked for going through all the related stages. In this task the following Unesco (2000) guideline was to be helpful–

a. Policy initiatives emanate from, impact upon various levels-global, international, national and institutional. Global factors affect countries in different ways, and policies originating from international agencies and associations may have an influence on national legislation, institution and their staff. Generally, national legislation has the most direct impact on distance education developments and institutions, while an institution's policies determine actions within its national remit.
b. The media have a second function, that is, as an instrument of education. This function is of growing importance, particularly in the undeveloped countries.

Vulliamy's remark (Vulliamy, 1990) in this regard is accepted as quite valid:

> In developing countries it is most of the time quite difficult to penetrate any marked divorce between policy and practice.

A thorough search of the documents and chronological listing was considered essential to bring to light the government policies related to the use of technology in school science as well as teacher education. The ultimate task was to find out the impacts on the part of learners engaged in some sort of educative programme under both national level recommendations as well as international level delivery processes of films, radio-TV lessons to supplement the printed texts.

The most pressing set of questions that lead the researcher to the construction of a valid rationale were the following-

a. Did the decision makers formulate the right policies at the right time related to the use of technology in the distance education arena from the beginning?
b. Did the concerned developers properly develop the right plan, components at the right time related to the use of technology in the (science + distance) education arena from the beginning?
c. Were there real learner-friendly instructional design (ID) models in the education policies to provide a foundation and to offer guidance to the planners of those time when learning theories were not that much technology-oriented or suitable for Asians?
d. How comprehensive were the instructional designers for the present and the coming future at times with AVEC, SBP, NIEMT, BIDE BOU, etc?
e. How could the early national institutions like AVEC, SBP, NIEMT, BIDE structure a proper 'LS' and 'LE' for the learners?

1.2.1-Design-delivery-evaluation stages depicted in national Policies & Functions of National Educational Broadcasting Institutes

A continuing and thorough process of "collection-reading of the related documents preceded by f-to-f interview with technical officers" helped the researcher to form a first-hand events picture, which when arranged in time frame gave rise to the following Table1.2.1.1-

Table: 1.2.1.1- Chronological Picture of Policy Recommendations

The important recommendations or policy formulation events that led from the very beginning of 1948 to the establishment of Bangladesh Open University and beyond are summarised here one after one, chronologically-

1948

The Proceedings of the First Meeting of the Advisory Board of Education for Pakistan (1948)-

(page 5)-10. Item vii:

- the formation of community centres equipped with books and radio and -provision of mobile vans for the exhibition of appropriate film at such centres.

(page 21)- 4: In the selection of foreign educational films and in the production of educational films in our own country, utmost care should be taken.

- A small Committee of Visual Education, consisting of teachers and officers of the Education Division may be set up in due course to ensure proper selection of educational films and themes.

- 5: Use can also be made of educational broadcasting in the task of educational reorganization and development.
-Radio can be useful in this matter and for this educational broadcasts may become the concern of the Central Education Division who will ensure their integration in the educational conception under discussion.

1957

Report of the Education Reforms Commission, East Pakistan 1957(GOEP, 1957, p.46)-

Recommendations on Correspondence Schools-

- In order to provide facilities to those whose formal education has been interrupted by the need of earning a livelihood, but who are desirous of pursuing knowledge, technical or otherwise, we recommend that an experimental start may be made with a system of correspondence schools.

- A few selected institutions should be asked to open a correspondence section. For example the Engineering College, one or two polytechnic schools, some good science colleges, one training college, and a few good high schools may conduct these courses under the supervision of the Directorate.

- An initial grant of one lakh of rupees may be made, to be renewed according to the expanding activities of the department.

March 1970

The New Education Policy of the Government of Pakistan (March 1970)-

The recommendation was about correspondence courses for in-service training of teachers.

It said modern techniques, such as programmed learning could be used in combination with radio and television to increase the effectiveness of in-service part-time training arrangements for teachers. It felt such an arrangement would particularly be useful to the teachers working in remote rural areas.

1992

The Act No. 38 of 1992-The Act made for the provision of establishment of the Bangladesh Open University-

Objectives of the University-

The objectives of the university shall be to expand all levels of education... including the use of any communication technology to improve the quality of education and to provide opportunities for education to the general public ... improving the quality of education in general.

2002

People's Republic of Bangladesh: Preparing the Secondary Education Sector Improvement Project-II (Financed by the Japan Special Fund)

Recommendations were previously made by Teacher Education Task Force.

SESIP was a Government of Bangladesh (GOB/Asian Development Bank (ADB) project to assist the development of the secondary education sector (grade 9-12) in Bangladesh. Its Technical Assistance in secondary teacher education was for-

a. Contributing to the development of a national policy for secondary teacher education;
b. Developing human resource capacity of teacher educators at Christchurch College of Education, New Zealand;
c. Planning, developing and training a course of initial teacher education to replace BEd.

Recommendations were made by The Teacher Education Task Force.

2002

Along with the search for any information and suggestions, recommendations on technology-based education search for government policies related with these was always on. The first ever form of a solid national ICT policy was finally traced in July 2007, when Bangladesh Government has passed the-

ICT Policy of Bangladesh and draft version of the National ICT Policy of 2002 contained among others the following recommendation in the Human Resource Development section-

Action Plan: Short Term (FY 2001-2002)- Human Resource Development section:

IT Related Distance Education Scheme of the Bangladesh Open University will be expanded through the use of TV and Internet. Private TV Channels should be encouraged to start IT Education Program.

2004

TQI-SEP/BOU- PP 2004: TQI-SEP Project -

The project included four components. Among them the third component were related to distance education.

Component 3-

... strengthen in-service and pre-service teacher training. In terms of pre-service training, the component will support ... and the BOU in implementing a standardized BEd that has been declared the minimum requirement in secondary schools.

The project will also work with BOU to provide distance study opportunities for teacher participation in these training programmes.

On the basis of a capacity assessment BOU will receive assistance within a number of different areas, which will aim for bringing about capacity to develop quality pre- and in-service teacher training materials.

An innovation and development fund will be established and made available to support reforms and innovative schemes in teacher education institutions.

The component will identify the remote and underserved areas on which to focus provision of mobile facilities and outreach services to disadvantaged areas. (PP, p.27 section 3.2.)

2006

The policy proposed in 2006 - downloaded from the web says that it has – incorporated all the ingredients of the 2002 policy.

2006

Capacity Assessment Study Report on Bangladesh Open University conducted by TQI-SEP distance education Advisers (July, 2006)-

B. Planning, management and administration (page 12) -

4. ICT Policy-

4.1 That BOU develop an ICT policy based on solid information and research results and that an incremental implementation plan be prepared.

2009

ICT Task Force of 2009 Government-

The ICT Policy 2009, ICT Act 2009, Right to Information Act 2009, various local government acts promulgated in 2009 laid the foundation for identifying the Digital Bangladesh priorities for the government.

Bangladesh Computer Council (BCC) under MoSICT develops the ICT Policy and ICT Act and is responsible for monitoring the implementation.

After the formation of the above Table: 1.2.1.1 it was found necessary to explore the international picture on use of technology in education. Deep search through a number of documents helped the researcher form the following Table1.2.1.2-

As an insider of the field of distance education, the present researcher by way of a combination of talk with old institutes' technical officers working at present with the Media Division of BOU and continuous reading of documents, reports, etc; gathered foundation

level knowledge on the existing national distance teacher education field. At first, general tracking and deep down the ground level search lead the researcher to prepare a list of the institutes and their level of work which progressively paved the use of the mode of distance education in both school science and teacher education. The researcher prepared a list of the following institutes and programmes -as being the deliverer of distance education in this land-

a. Audio Visual Education Centre (AVEC),
b. Education Extension Centre (EEC; didn't play any lead role in distance education though),
c. School Broadcast Programme (SBP),
d. National Institute of Educational Media and Technology (NIEMT),
e. Bangladesh Institute of Distance Education (BIDE),
f. Bangladesh Open University (actually it is blend of creation of BOU added by the merger of AVEC, SBP, NIEMT, BIDE) and
g. BOU-TQI-SEP (unified national standard curriculum of BEd).

Table: 1.2.1.2- Initial Activities of the Target Institutes

1956- AVEC (Audio Visual Education Centre)

According to a notification of the Director of Public Instruction, dated 2.5.60 there was a workshop at its Audio Visual Section, and at the beginning it was a section under DPI which subsequently started to appear as a small Cell under the Education Directorate of the Ministry of Education.

In 1956 the government of East Pakistan received a number of wet battery radio sets as gift from Japan; among these 200 radio sets and 400 car batteries were allocated to the Education Directorate. These were to be distributed to educational institutions of the province (East Pakistan). The Directorate created a small "Cell"- and asked the extra service of a government teachers' training college teacher to oversee the distribution.

1978- SBP (School Broadcast Programme)

In early 1978 the Japanese Government offered an amount of 700 million Yen as a grant to the Government of Bangladesh to develop School Broadcasting Programme in Bangladesh. Later on an agreement was signed between the two governments and it was decided that radio listening equipment would be supplied to improve the standard of education in Bangladesh. Subsequently the equipments arrived.

1983- NIEMT (National Institute of Educational Media & Technology)

The two institutions AVEC, SBP were merged in April 1983 to form National Institute of Educational Media and Technology (NIEMT).It was a media institution under the Ministry of Education. A policy indication of 1979(Interim Education Policy) helped its formation.

1981- BIDE (Bangladesh Institute of Distance Education)

It is found by the researcher that a Project Proposal was submitted for the monetary allocation in favour of Bangladesh Institute of Distance Education(BIDE) ; it is also revealed BIDE started its function in January, 1981- just two months after the visit of British Team in November 1980.

But document evidence says that BIDE was officially formed in 1985 by renaming NIEMT and tone of the four PPs says that it started its function on 1st January 1981.

1992- BOU (Bangladesh Open University)

Scheme for the Establishment of BOU (1992-1997)-

Bangladesh Open University Scheme is very much relevant to the Fourth Five Year Plan and education sectoral objectives. The main objective of the BOU is to increase equitable access to education, to develop human resources of the country and to improve quality, relevance and efficiency of the education system.

Table: 1.2.1.3- International Events that guided National Level Development of instructional Technology in Bangladesh in the Delivery of Distance Education

Description
Unesco/UN Policy Model of Education- In the UNESCO constitution, which was approved in 1946, it was Librarian of Congress Archibald MacLeish whose hand often guided the pen, notably in drafting the famous and lapidary statement with which the document opens: Since wars begin in the minds of men it is in the minds of men that the defenses of peace must be constructed. UNESCO's constitution, subsequently, committed themselves to the

goal of educating everyone in this statement:

'For these reasons, the States Parties to this Constitution, believing in

- full and equal opportunities for education for all,

are agreed and determined to develop and increase the means of communication between their peoples ...'
This statement is the core of UNESCO's work in education. The Constitution goes on to set the context of UNESCO's work, concluding-

'That the wide diffusion of culture, and the education of humanity for justice and liberty and peace are indispensable to the dignity of man and constitute a sacred duty which all the nations must fulfill in a spirit of mutual assistance and concern.'

Preliminary literature search revealed that-

During and following the post Second World War survey of information facilities in underdeveloped areas,

Unesco dispatched a number of expert missions to Africa, Asia and Latin America and awarded fellowships to information specialists in those regions for specialized training abroad. This assistance has been utilized, for example, in the development of national news agencies, the improvement of printing techniques and the organization of educational broadcasting services and film institutes-

a. seminars and technical meetings have been held on various subjects, including-

   a1. the production and use of audio-visual materials for education,
   a2. the exchange of radio broadcasts and the use of television for education.

b. Experiments and pilot projects have been conducted in the use of radio, film and television for education in rural areas (Unesco Report 33, 1961).

Direct Class Teaching by Radio

Educational radio has been employed within a wide variety of instructional design contexts. In some cases it is supported by the use of printed materials, by local discussion groups, and by regional study centres. It is sometimes designed to permit and encourage listener reaction and comment. Indeed, in some cases, there is provision for the audience to raise questions and to receive feedback.
The most notable and best documented example of the direct class teaching approach is Interactive Radio Instruction (IRI). This consists of ready-made 20-30 minute direct teaching and learning exercises to the classroom on a daily basis. The radio lessons, developed around specific learning objectives at particular levels of mathematics,

science, health and languages in national curricula, are intended to improve the quality of classroom teaching and to act as a regular, structured aid to poorly trained classroom teachers in under-resourced schools.

In Asia, the 44 radio and TV universities in China (including the China Central Radio and Television University), Universitas Terbuka in Indonesia, Indira Gandhi National Open University(IGNOU) and Bangladesh Open University(BOU) have made extensive use of radio and television, both for direct class teaching and for school broadcasting, to reach more of their respective large populations. For these institutions excepting BOU, broadcasts are often accompanied by printed materials and audio cassettes.

Japan's University of the Air was broadcasting 160 television and 160 radio courses in 2000. Each course consisted of 15 45-minute lectures broadcast nationwide once a week for 15 weeks. Courses were aired over University-owned stations from 6 am to 12 noon. Students were also given supplemental print materials, face-to-face instruction, and online tutorials.

School Broadcasting

Often deployed with print materials, cassettes and CD-ROMS, school broadcasting, like direct class teaching, is geared to national curricula and developed for a range of subject areas. But unlike direct class instruction, school broadcasting is not intended to substitute for the teacher but merely as an enrichment of traditional classroom instruction. School broadcasting is more flexible than IRI since teachers decide how they will integrate the broadcast materials into their classes.

Large broadcasting corporations that provide school broadcasts include the British Broadcasting Corporation Education Radio TV in the United Kingdom , the NHK Japanese Broadcasting Station and lastly Bangladesh Betar (in 1966 Radio Pakistan had started it in the same geographical land).

In developing countries, school broadcasts are often a result of a partnership between the Ministry of Education and the Ministry of Information.

Film and Video Presentations

Until the sixties of the last decade, the 16mm cine film was one of the mainstays of both education and training, both as a support for conventional face-to-face teaching and as a lecture substitute. With the arrival of the inexpensive videocassette recorder- which makes it very much easier to show film-type programmes in the classroom- however, the use of videos then virtually completely replaced the use of film in these contexts .The present situation is quite different with the use of computer and other electronic gadgets.

Side by side preparing the Tables 1.2.1.1, 1.2.1.2 & 1.2.1.3 information and data were collected by the researcher on the progress of educational broadcast in this land to formulate the rationale of her study and this is what she found out preliminarily-

Broadcasting was started in the region during World War II. The town of Dacca was chosen, amongst other cities of the then British India, for establishing a war propaganda station, and in December 1939 broadcasts directed to the British Colonies began from a 5kW medium wave transmitter at Mirpur. (CBA, 1983)

Work procedure of the national institutes identified earlier is of help in the formation of the rationale of the study.
Through the present study the researcher wants to focus attention on the policy and technical/instructional design aspects, to see its success in creating the necessary learning environment and learner space, related to the two programmes: school science and BEd programme by distance mode.

Coming up to this starting or founding points it seemed necessary to form a chronology of international and national events identified through Tables 1.2.1.1, 1.2.1.2, 1.2.1.3 and with it also to get involved in further literature review. The activities and events (Evts.) are recorded in Table 1.2.1.4:

Table: 1.2.1.4- Chronology of Events

Evt.1-Unesco played the lead facilitator role in the initial delivery phase by taking care of the technical development sides.

Evt.2-Aided by the technical or working skills provided by Unesco, government institutions under the Ministry of Education in East Pakistan tried a few innovative ideas to incorporate technology in education system throughout the time period 1948-1971.

Evt.3- A number of related institutes were born, like- AVEC (Audio Visual Education Centre) and Education Extension Centre (EEC). Radio Pakistan gradually started to broadcast school subject-based lessons.

Evt.4- After liberation in 1971, the Bangladesh Government in the form of certain recommendations in the Education Commission Report (1974) clearly suggested the use of radio-television in school education and also to try '*open university*' project similar to the one in UK.

Evt.5- The Interim Education Policy: Recommendation of the National Education Advisory Council of 1979 through a separate chapter: Education through Communication Media made a number of innovative recommendations.

Evt.6- (Back in 1993 when the main researcher joined BOU, to gain first -hand knowledge of the field of distance education she had to study a lot of related documents including the Project Proposal (PP) of BOU and thereby found out that this PP puts importance on the main activities performed by different related educational institutes or projects and thus in her view it became necessary to include them in any research study like the present one.) To establish link in between these institutions it was necessary to

thoroughly read and took note of the technology-based teaching activities of all of them in all the three stages of design, delivery and evaluation.

Evt.7- It became apparent through document reading that though gazette notifications on different types of starting steps/changes related to education were always there they were seldom formulated by following the research process of critical analysis of all related research works.

A thorough investigation into the innovative uses of technology in distance education and classroom science teaching seems to be necessary. Looking through the international picture it is realised that the policy makers out of necessity look for research data as they have to take into account all options, and seek evidence collected from different sources and seeking the best available options to incorporate them in their policies. It is thus natural to think that the curriculum setters on their part must also have access to reliable research output on related fields so that they can actively search for useful logical evidence needed to make decisions regarding formulation of syllabus, use of technology in instructional design, evaluation system, etc.

Formation of the Rationale

With in-depth study in to all the related national recommendations, design, delivery concerning ICT-based learning materials the researcher constructed the following rationale -

It is necessary to search for the Policy Coherence in the Application of Technology for National Distance Education.

1.3- Research Question

The above-formulated rationale gave rise to the following main research question (MRQ) –

MRQ. Does the process of design-delivery stages of introduction of 'innovative uses of ICT in a running secondary education related project functions according to any specific learner's theory where the concept of ID is very important?

In the process of finding an answer to the question the researcher saw that the project proposal of BOU (1992) starts with a sentence like-

The history of distance education begins with the formation of AVEC in 1956...

To the researcher it became necessary to ascertain whether all the above-mentioned institutions had their starting linked with foreign expertise (Unesco, 1961) or not and further what type of specific training they received, etc. (Report, 1985). All this was necessary to see the correctness of the application of learning theories along with the IDs needed for the facilitation of student learning.

The following points (**Ps**) were perceived as important-

P1. As any donor project has got a definite time limit to start and complete the project, the implementing authority always puts its' all out effort and attention to complete the project financially. It may thus happen that the implementing authority usually doesn't get time to check and evaluate the proper academic functioning of the related projects' different vital parts. It becomes obvious that at this new millennium, open and distance education system is fast being superseded by other forms of Asynchronous Learning Network (ALN) like on-line, etc. (Rockwell et al., 2002).

P2. Although Bangladesh is frequently listed quite at the bottom part of the developing nations, ALN system of learning has already put its' imprint in various forms and with this two opposite- sided existence, a country is surely bound to bear in mind that ICT based educational facilities must at present be policy bound and have to be realistic and forward looking. And these policies must have to be implemented very carefully keeping in mind the learners' needs and achievement.

P3. Important learning models helped the researcher in the initial stage to trace and classify the application of instructional technology related to the preparation of audio-visual learning materials in the light of this model. One of the focus was to see what was the direction followed by all these identified institutions , to identify the trace of any systematic way like policy-led design, deliver and evaluation stages and in case there were policy guidelines how far the technology /ICT related educational policies were in line with the intellectual demand of the learners.

P4. Though the western ODL (Open & Distance Learning) experts are given the credit of introducing and establishing the ODE models of teaching-learning it is necessary for Asians, to bear in mind that in Asia region a variety of forms of learning systems existed in the past and most probably it is time they start to realize that western models are not always the best ones for their learners.

With all these important points generated it seemed that the ground is quite ripe to undertake an qualitative research study with the ultimate aim of formation of an appropriate grounded theory.

With this firm ground it became necessary to see if all government policies starting from the end of Second World War (1949) on using technology in education specially the section of open and distance mode had fair chances of being implemented for the benefit of the ultimate stakeholders- school level science students and trainee teachers. And the following justifications for undertaking a thorough research were prepared:

a. Bangladesh (during the period of 1948-1956 the land was known as East Pakistan) entered into the field of media-based (or more appropriately visual teaching-aids based) education support system back in 1956 with prime attention dedicated to the improvement of teacher education field; unfortunately there is no hard evidence of comprehensive research work done to evaluate the effectiveness of the technological design in the production of education support materials.

b. Bangladesh formally and instructional theory-wise entered into the field of technology-based open and distance education (ODE) in the 1980s with incorporation of this mode into the distance teacher education programme BEd. Though the world has since long entered into the time-bound field of ICT in education, it is not reflected clearly whether the work-in-progress at BOU is giving due consideration to the working theories. Hence it is necessary to conduct a retrospective study on policy-practice in the part of technology-based instructional design system of each of these institutions -AVEC, EEC, SBP, NIEMT, BIDE, BOU in order to formulate a policy model of instructional technology.

c. Institutional or official evaluation reports on the implementation level of any government policy may cast some doubt in the minds of a dedicated educationist. This has reference to the fact that many bright outcomes appear in these reports but when a new government regime comes the retrospective reports always mention a number of failures. This trend of appeasing the present administration almost always overshadows the correct future path. Research reports can identify the true strengths and shortcomings of any activity. The Second Five Year Plan (1980-85) admits of the sort of failure officially-

A critical appraisal of progress reveals a wide gap between the planned targets and actual performance. This was due to marked departure from the programmes envisaged in the plan... the fruits of development did not reach the doors of those who actually needed it most.

In short, educational development could not bring about equality of educational opportunity as was envisaged.

Reaching thus far the following question of great importance for an up-coming research was taken with importance:

Was there Policy Coherence on the Innovative Uses of Technology for Distance Education at National Level?

It is a known fact that policy makers at various levels and across a range of sectors, including education, believe that new technologies can make a significant contribution in solving difficult and pressing problems.

In course of the time period of this research it came to surface that Bangladesh in 2002 prepared a draft ICT policy identifying the possible fields of use of ICT in education but then eventually it formulated two modified versions, keeping the 2006 version posted in the internet.

1.4- Objectives of the Present Study

The researcher identified three main reasons and a set of preliminary objectives for undertaking a comprehensive task of investigating into the use of innovative technology in school science education as well as secondary teacher education by distance mode in Bangladesh.

It is already stated that in the present study the researcher wanted to focus attention on the policy and technical/instructional design aspects, to see its success in creating the necessary learning environment and learner space, related to the two programmes:

a. School science and

b. BEd programme by distance mode.

She thus decided that the evaluative study on policy and practice of technology-based open and distance education, when taken should revolve around the relevant components like:

a. Roles played by policy makers.
b. Roles identified and played by media and technology,
c. Penetrating power of this mode among the target groups.
d. Identifying future possibilities to help generally the mainstream education and specifically the school science teaching through microteaching.

The reasons identified thus far, the search through numerous national documents finally helped to formulate the following research objectives (**Res.Obs**) of the study:

Res.Ob.1. To identify the policy implementations and policy anomalies in the design-delivery stages of 'technology/ICTs in the instructional design parts of the programmes run by AVEC, (EEC), SBP, NIEMT, BIDE and BOU, BOU-TQI-SEP in both of their school science teaching and teacher education programme BEd.

Res.Ob.2. Assessing the presence of learner space(LS) and learning environment in (LE) in the design-delivery stages of the instructional design part of course material production for BEd.

Res.Ob.3. Policy coherence in the development of design-delivery-evaluation parts of microteaching, tutorial Services and practice teaching offered by BIDE, BOU and BOU-TQI-SEP.

Res.Ob.4. Evaluating the evaluative values of projects & research works.

Res.Ob.5. Suggesting a technology-based instructional design model for learning material development of the BEd programme , which could eventually be used for BOU-TQI-SEP BEd which got introduced in 2007.

1.5- Title of the Research Work

The ultimate aim of this study was thus far marked to be able to make a number of recommendations which can in turn be tried in -

a. the implementation stage of the up-coming national education policy (2009);
b. the review stage of SoE-TQI national BEd;
c. the ICT policy formulation stage of BOU.

With all these in mind the researcher finally constructed the title of her research study-

A Study on Innovative Uses of ICT in Distance Education in Bangladesh: Design, Delivery and Evaluation

1.6- Search for an Appropriate Grounded Theory

With all the information collected and presented up to now it became clear that the study will have to deal with qualitative data. And hence there arise the question of choosing appropriate theory treating qualitative data. Formation of an appropriate grounded theory seemed to be the solution.

After literature review in Chapter Two, Chapter Three will present the main research methodology, the best suited data generation- coding procedures, which would then be used in Chapter Four for the grounded theory formulation.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1- Introduction

This chapter is an investigation on the range of research performed by national and international researchers with the aim of finding the range of works done till now by the researchers on the design-delivery-evaluation sides of use of technology in distance education. Another significant aim was to find pertinent research methodologies related to trace the use of innovative and appropriate technologies that have found use in distance education research. A third significant aim was to construct a clean picture on the use of research results by policy makers of education at national level.

Literature reviews are complex, time-consuming undertakings. Strauss and Corbin (1998) recognised the importance of researcher knowledge and viewed readings of the literature as enhancing the horizon. Most research methodologies used by social scientists are deductive and require the researcher to commence with a review to inform the study and formulate the research question.

In this chapter research findings on a number of identified sections marked important were searched through theses, documents and through now-a-days available Internet search. After the presentation of each section a short summary is prepared on the findings. At the end of the chapter all these short summaries are combined and analysed by the researcher to get the concrete summary.

2.2- Findings from Related Research Papers and their Summaries

The researcher of the present study took advantage of the facilities like library-based theses, document search as well as the Internet search to the fullest to gain knowledge and collect basic but concrete and informative data for the formation of this chapter. In spite of being time consuming due to untidiness prevailing in most libraries and unpredictable slow speed of downloading, a good number of national and international research papers were downloaded. Apart from the theses at IER library at least two dozens of related PhD theses could also be downloaded and read thoroughly.

All the related works traced and identified were divided into the following sections-

Section: 2.2.1(RBG)- National Research Studies on Distance Teacher Education in Bangladesh

Section: 2.2.2 (Pol.) - Research on Distance Education Policy,

Section: 2.2.3 (Tech.)- Research on Innovative Uses of ICT in Distance Education,

Section: 2.2.4 (L.Th.)- Research on Application of Learning Theories related to Design-Delivery-Evaluation,

Section: 2.2.5 (Grnd.Th.)- Use of Grounded Theory in Research on Distance Education.

Section: 2.2.1(RBG) -

West(West,1922-1927) emphasised on the necessity of research in this geographical area in teacher education in the nineteen twenties by saying:

> India is so different that we have felt that the special problems of India education should be solved not merely by imitation of others whose circumstances are different, but by research and experiment of our own.
>
> After a few years the effects of training begin to pass off; the teacher gets out of date, and it's content to remain so. An educational journal would do something.

A collection of country papers titled -Distance Education in Asia and the Pacific (1993) was produced by The National Institute of Multimedia Education, Japan for Unesco. The Bangladesh paper covering mostly the situation created by BIDE up to 1987 was prepared by Haque. He noted that there was no stated communication policy for distance education or more specifically distance education mode based teacher education BEd. He also stated-

> In TFYP, 1985-90, proposals included, "audio-visual aids, viz., charts, posters, globes, maps, etc., will be supplied to primary and secondary schools under the BIDE project. TV sets, video tapes, cassettes, tape recorders, films, slides, film projectors, slide projectors will be supplied to TTCs, NIEAER and NAPE under the BIDE project', and correspondence courses in secondary teachers training will be experimented under a pilot project.
>
> The BEd distance education programme was introduced with the approval of the president of the country in June 1985. No law was passed or government executive order issued to give distance education a legal footing.

It was interesting to read the ADB report of 2002(ADB, 2002). Titled-Operations Evaluation Mission, it says that three key issues emerged from the evaluation of the BOU project, and among them in the eyes of the researcher first one was found to be very important for BOU-

> BOU should try to increase the utilization of its media center by exploring possibilities to broadcast its programs directly from the media center, rather than sharing the existing radio and television channels (page 7).

A project work conducted by McWilliams (McWilliams, Akhter, 2007) found very interesting results at the end of their training course related project provided for BEd trainees on use of mobile phones. They found that trainees were interested to explore the educative

use of smart phones and they identified certain weak points which to their opinion could be common to any education related project work undertaken in Bangladesh-

a. Teachers were able to develop their skills. Individual thinking skills and analytical skills of teachers were developed. Exchange of ideas was very useful. This mode has forced teachers to prepare themselves and as a result they have become more active.
b. The majority of participants indicated that they would be willing to participate in future technology supported training opportunities.
c. More attention needed to be paid to orientation to the distance learning CPD programme and to training in the use of the technology.
d. Females generally were shy of the technology.
e. Complexity of downloading video from mobile phone to lap-top requires additional software and training.

Rahman (2002).suggested in detail the steps which could improve the inter relationship of learners and tutors.

Ali (2002) commented in a paper prepared for Asian South Pacific Bureau of Adult Education (ASPBAE) Research on Information and Community Technology that-

> Bangladesh Open University relies heavily on print materials, electronic media like radio-television and audio-video cassettes, tutorial services, computer networking and the internet. He says that the use of these techniques helps BOU to take its academic programmes to the doorsteps of people far and wide. According to him it makes room for in-house education.

Islam (2010) suggest that-

> strategies to motivate students should be incorporated in to instructional design and materials.

Rahman (2008) in his conference paper made the following recommendation on course materials of the BEd offered by TQI-

> National BEd under ODL setting should address about getting students to work together, discuss, reflect and share ideas to construct their own understanding of the world around them what is called constructivism. BOU National BEd program should concentrate all the way to ensure this issue.

Islam & Hossain (2002) in their study reported about the strengths and weaknesses of the now discontinued BEd (of 1992-2006, BOU) with certain suggestions for its quality improvement.

Hossain (2002) in her conference paper pointed out a good number of specific issues related to the use of computer in distance education in the context of gender perspective in South Asia in general and Bangladesh in particular.

"AAOU On-line Discussion, 2000" added some valuable suggestion in its 'QA Framework' through the participation of Hossain (Hossain, 2001). Though Hossain is a faculty member of BOU, BOU is yet to adopt any such quality framework.

Hossain (ed., 1999) in her country paper on Access to Distance Education by Bangladeshi Women in the . CRIDAL Report, OUHK presented case studies on Bangladeshi female learners. Six different type of cases were presented showing the resilience, determination to complete the distance education programme they got admitted, finding study time after whole day's work etc.

Hossain (ed., 2001) presented a good number of case studies depicting BOU's female distance learners. The daily work routine, their specific study time, special study habits, help provided or resistance shown by family members were highlighted. It was an online case study book published by COL. Six female distance educators from six South Asian Open Universities took part in this research publication, being financially assisted by Unesco.

Khatun (1997) conducted an evaluative PhD research work on the Reliability and Validity of Examinations for the BEd degree programme of BIDE through distance education and the regular BEd degree program of teachers' training colleges. Her findings say that the evaluation system of the BEd programme was quite valid though the multiple type examination technique curtailed the writing capacity of examinees.

Summary on Section: 2.2.1(RBG)

Through the presentation of nineteen cases of this section it is seen that a country like Bangladesh has much to do in both fields of inclusion of technology components for BEd distance mode students or to improve the situation of gender issues with respect to other South Asian countries.Only one PhD research work was conducted on evaluation of the BIDE BEd programme. Some shortcomings of school science teaching connected to the old BEd programme of BOU were identified.

It was also found out that female distance learners of Bangladesh possess strong determination to complete their respective education programmes in spite of many hurdles. Though TQI-SEP recognized BOU as the distance education programmes offering institution it never consulted BOU as partner while conducting the project on use of smart phones.

Section: 2.2.2(Pol.)

Systematic research in distance education started in late 1950 and Joannes Riechert of Feirberg (of the then East Germany) is credited to be the author of first published work titled "Write, Teach and Learn" (Misra, 1994).

Rekkedal (1995) in his paper -research in distance education-past, present and future (1994) tried to present the state of research in distance education field where he says-

> The most powerful force for development in distance education come from the synergetic effect of interrelating research and practice.

He also says-

> We believe that today it is correct to say that distance educators generally have been more engaged in theoretical and practical research related to their own field than their counterparts in the traditional mainstream of education.

Rekkedal (1994) suggests-

> A lot more research is needed on how to exploit the new possibilities, teaching-learning strategies and social and cognitive aspects of learning in the new technological environments.

In recent times, numerous research studies like that of Anderson (Anderson, 2007) made it clear that-

> policy affecting distance education operates at a number of levels and across a variety of sectors. While educational policies will be central, the nature of distance education and the use of technologies mean that other sectors can impact on developments. Active interest in the fields of learning, media and communication is necessary to serve students in a non-traditional setting like distance education. This need will only increase as new media and technologies are continuously introduced.

Ramanujan, one of the leading distance educationists (2001) says-

> In the case of formulating policies of ICT, the leaders have to carefully weigh the different options available to them before they commit heavy investments to a particular technology. The structure, staffing pattern and management styles of open universities have to change quickly, if they have to benefit from ICT. Institutional leaders must be aware of their environment, and the consequences of their policies and actions.

Rekkedal (2007) talked about Mobile Distance Learning with PDAs. He says-

> NKI's (Norwegian Knowledge Institute) research and development on mobile learning in connection with the three EU Leonardo da Vinci projects have led to better, more flexible mobile solutions needed to serve distance learners studying online. They found that courses must be developed, presented, and distributed in a manner that allow both mobile and non-mobile distance learners to participate in the same course, using the same course materials that can be accessed from standard and mobile technologies. Moreover, he identified that course contents available on mobile devices must be of minimum acceptable quality. Interaction with course content and multi-media materials, as well as communication with tutors and fellow students, must function adequately using both standard and mobile technologies.

Nawawi (2004) in his study titled -Distance education public policy and practice in the higher education: the case of Malaysia said that in 1996 the government directed all nine universities operating in Malaysia to open their doors to distance learning. His paper revealed that the Malaysian government took measures to improve accessibility in order to increase participation at all educational levels through the distance learning programme as stipulated in the 7th Malaysia Plan.

Otto Peters(1973) said that distance education is characterised by a division of labour between many different experts and professions.

Panda (ed., 1999) in the book-Policies, practices & Quality Concerns narrated the progress in India where he revealed the following important information-Expert Committee on Correspondence Education suggested that correspondence courses leading to a degree or equivalent qualifications should be administered by universities only.

Bernadette (1999) stresses that globalisation raises particular issues for the transfer of distance education models and for teaching and learning across national boundaries. She thinks-

> better understanding through research is needed of the cultural contexts of learners and cultural assumptions underlying distance education programmes.

Moore (Rekkedal, 1995) says that-

> distance education as an applied professional field... needs two kinds of research. Obviously it needs research which helps to solve problems, but it also needs basic research- that is, research which tests and extends basic knowledge which is helpful to us all- and that is the theory.

Bates (Rekkedal, 1995) suggested-

> a. Technological developments need to be preceded and accompanied by research and evaluation, to monitor carefully not only the learning ...
>
> b. Distance teaching institutions should be investing in more immediate and practical issues, such as monitoring student access to equipment, studying the

design implications of video-cassettes, evaluating new types of course design based on new technology, and studying the cost and organizational implications of introducing new technology.

Keegan (1990) categorizes research in the field of distance education as a distinct field of educational research and training within the discipline of education.

In the USA, the Educational Products Information Exchange (EPIE) Institute, operates a programme providing planned solution to the problems related to educational projects.

White and Tyler (1983) proposed a strategy for research in distance education in their paper- A pragmatic and likely fruitful path for researchers to follow. It's steps are outlined below-

a. Select an appropriate issue for investigation, e.g. study time and student achievement,
b. And conduct a thorough theoretical analysis based on an extensive review of the literature; generate specific, carefully articulated hypotheses;
c. Select an appropriate research methodology;
d. Select/design appropriate instrumentation;
e. Co-ordinate a series of action research projects on the selected issue in a variety of distance education settings.

An evaluation project was tried for the Australian Schools Catalogue Information Service (ASCIS, 1993) by a group of researchers. The researchers used CIPP model, and assessed the relevant capabilities of the responsible Australian educational agencies by assessing different related criteria that relate to research and development activities, diffusion activities as well as for adoption activities.

The Australian case cited above applied questionnaire survey by preparing the questionnaire derived from a technique termed Policy Implementation Analysis and administered it to assess the strategies of foreign educational organizations could employ to achieve the goals of the respective programme.

Summary on Section: 2.2.2(Pol.)

Section 2.2.2 (Pol.) shows that only one is a research study on education policy prevailing in Bangladesh (paper 6). In Bangladesh the distance educators are yet to put importance on conducting research studies in this field though internationally acclaimed distance educators are highlighting the importance of research on different aspects of policy related to distance education. It must be seen that research is needed to provide the context within which distance education is developing along with the inputs that are needed to effectively implement distance education opportunities. And, unlike the past, in the present era policy makers wishing to initiate or encourage innovation and change in incorporating ICT in education will need to undertake a policy audit to take a broad view of the interrelated policy aspects which might need reform and new legislation (Unesco, 2000).

The following section presents a good number of research studies conducted in different countries on innovative uses of technology in distance education.

Section: 2.2.3 Tech)

Kumari (2009) in an on-line posted study titled-Policy coherence in the application of ICTs for education in India & South Asia, categorises the situation of ICT in South Asian countries, like:

a. Distinct ICT in Education Policy -India, Pakistan, Sri Lanka,
b. Education sector plan in ICT Policies-Bangladesh, Nepal, Bhutan, Afghanistan;
c. ICT Plans in Education Policies -Bhutan, Afghanistan;
d. Others-National Development Plan, in Maldives.

Kanjilal (Kanjilal, et al., 2008) presented the following paper at the PCF5 conference-Promoting scenario- based e- learning at IGNOU: faculty experiences. The authors in their paper described the experience of preparing IGNOU faculty to design scenario based e-learning instructions. They gave a description of it the following way-

a. Two workshops were conducted to train the faculty in developing scenarios for the already existing courses.
b. A special e- platform for the workshop was developed to give them first-hand experience.
c. The participants comprised faculty members from different Schools of Study involved in professional programmes like medicine, engineering, education, management, law, etc.
d. Each group developed a learning scenario in their respective discipline on a specific topic cantered on a story, challenging learners to reflect, solve problems and involve in learning activity that provide a meaningful learning environment.
e. The study was performed at the Department of Computer and Information Science.

Melissa (2007) published a paper titled-A new design on plagiarism: developing an instructional design model to deter plagiarism in online courses. She says about her study-

a. This study has linked the key elements of the instructional design process for on-line learning – learner considerations, course organization, instructional strategies, and evaluation to many of the mediators and remedies for plagiarism identified in the literature.
b. It has also developed an instructional design model to deter plagiarism in online courses.

Mutiara (Mutiara et al., 2007)'s paper titled- Designing, developing, producing and assuring the quality of multi-media learning materials for distance learners: lessons learnt from Indonesia's Universitas Terbuka (UT). She found that-

a. UT has developed multimedia learning materials for its students, with the printed materials as the major media supplemented with audio-cassettes, video programs, television programs, audiographic programs, computer-assisted instruction, web-based materials and online tutorials.

b. Learner support is provided to facilitate student learning, such as tutorials, 73digitizing, study groups as well as administrative services.

c. Students' needs for tutorials are provided and facilitated by regional offices.

d. UT uses radio programs significantly to reach its remote students and enhance the students' learning process. The broadcasting of these radio programs is done through by Radio Republik Indonesia (RRI), the state-owned national radio network, every day for 20 minutes, and by local community and private radio network in partnership with Regional Offices.

e. In case of the programmes for television, the copy master was sent to the TV station, broadcasting the UT programs.

Sife (Sife, Sanga, 2007) presented a paper of the title-New technologies for teaching and learning: challenges for higher learning institutions in developing countries. Here they discussed new learning and training technologies considering their pedagogical, cost and technical implications. The case of Open University of Tanzania is discussed also. Some major findings-

a. The university has the basic ICT infrastructure, such as Internet, computers, local area network.

b. It has enacted its own ICT policy, which guides how to use ICT to fulfill the functions of the university that are teaching, research and consultancy.

c. Recently it is exploring an initiative to use an Open Source learning management system called "*Atutor for students*", starting with the BSc (ICT). If the project succeeds then other degree programmes will also be offered through the blended e-learning and distance learning.

Ramos (2005) in his paper titled- ICT in the curriculum: a grounded theory approach study, made an investigation using the grounded theory approach. In his work he used Internet, word processor and videoconferencing. The researcher found that-

a. the ICT have the power to always add something positive to apprenticeship, be it because these resources enthusiasm and motivate the students be it because they offer new opportunities to learn how to read, how to write and how to think, be it still because they may contribute to their social and professional integration."
b. His results show that there are no easy or final answers for the curricular integration of the ICT. Technology helps transform teaching practice, but it isn't the only or the most important means of its transformation. And among the numerous factors that contribute to the success of the curricular integration of ICT, the teacher emerges as fundamental.
c. . He suggests that teacher training in the use of ICT and its application in a pedagogical context must deserve teacher educators' very specific attention.

USAid (2005) report titled- Supporting Gender and ICTs: Opportunities for Women in Bangladesh, says-

a. The interface between education and ICTs is noticeably absent from Bangladesh Education Poverty Reduction Strategy Paper.
b. There is one ICT reference related to distance learning offered by BOU: Investing resources in new technologies. A high priority should be given and resources invested for taking advantage of new information and communication technologies for making learning resources available, improving quality of instruction, and increasing flexibility of academic offerings in higher education institutions (4.41.).
c. Bangladesh Open University, providing an avenue for higher education to the less well off, should adapt to methods and programs to realize the potential of the new technologies. The Internet, e-mail, teleconferencing and videodiscs should be put to use in distance education programs of the Open University to offer diversified opportunities to learners and to bring the world of learning to Bangladesh. The Open University and other institutions should use on-line course materials from international sources. Easy Internet access for faculty and students should be standard provision for higher education institutions (JBIC 2002).

Hossain (Ed., 2005) in her presentation of the country paper Educational Media in Bangladesh described respectively, the education and educational media scenario in Bangladesh.The applications of educational technologies reflect the dynamics of Bangladesh. She points out that-

a. a major initiative of Bangladesh Open University has been addressing inequality in the educational system of Bangladesh, not merely at the tertiary level of education, but more importantly at the school level through open school. Most distance education programmes, whether in the public or private sector, depend heavily on print as the basic mode of delivery, given problems of access to electronic media and low tele-density. However, electronic media support for

education has been in existence since 1956, when it was started as a small project. Today, this support is provided by the national radio and television service, with some educational programming coming from the facilities of Bangladesh Open University. Internet and Web-based technologies are yet to make any major headway. It is an irony that Bangladesh, surrounded as it is on three sides by India, has yet to benefit from the advances made by its neighbour in the field of educational media applications.

Aderinoye and Ojokheta (2004) have conducted a qualitative survey by interview and participatory experience on Nigerian distance education. They have applied Capability Approach Theory by paying attention on historical antecedents on distance education in Nigeria. In this survey article it is mentioned that-

b. Michael Omolewa brought international acclaim to himself, the Department of adult Education and his country, Nigeria, when he won the Unesco Chair on the application of ICTs to adult education for his department in 1998.
c. It further says that the use of ICT has now led to the establishment of an International Partners that spans the globe.

Hunter (Hunter et al., 2004) in their paper- Supporting lecturers in their move toward a new learning environment, Fiji, revealed that -

a. At the University of the South Pacific, video broadcast courses, which integrate face-to-face and distance teaching, are proving useful components as a means of scaffolding the transition of lecturers from a conventional teaching learning environment towards new ways of teaching that emphasise interaction rather than content delivery.
b. By providing ample support in a professional environment that uses technology to both replicate and supplement the traditional teaching roles, lecturers are allowed a "safe zone" in which to generate new skills while maintaining lecturer comfort.

In Iceland, Johannsdottir (2004) conducted a study titled- ICT competences in teacher education- meeting new challenges in the (Artic) Icelandic Society. In his paper Johannsdottir made a text analysis of the official curriculum texts for teacher education. His focus was on the awareness of the teacher educators and their response to the emerging new information and communication technologies.

His questions were-

How does the university respond to changes opening up new possibilities for educators and students alike? What are teacher educators doing to enhance

student use of ICT, such that they are capable of meeting new challenges caused by social and cultural changes where new technologies play a big role?

He paid special attention to the possibilities and role of distance teacher education. Johannsdottir found that the distance students were in many courses asked to write a log book to map their learning process and enhance their meta-cognition as students to use open blog-sites (web-log) on the web for that purpose. To him it appears as enhancing the feeling of being part of a learning community as one can follow fellow students' learning logs.

Rahman et al.(Rahman, Hossain, 2003) in their paper- Online learning at the Bangladesh open University: Perceived opportunities and obstacles discussed about the future possibilities of introducing online courses at BOU.

Sultana (2003) in her paper- Distance Education and Open Learning in a Developing Country like Bangladesh: Philosophy and Reality summarized that-

a. Due to limited availability and access to the modern technology, media cannot be used in delivering the courses, which raises the question about the quality of the ODL courses in Bangladesh Open University.
b. Public initiative can solve this problem in some extent.
c. Government can allow BOU to use a separate television channel or a big chunk (4-5 hours a day) in the national TV channel. The same thing can be done in case of radio.
d. Easy access to telecommunication can be extended to BOU students and staffs on priority basis.

Schulte (2003) conducted a study titled -Faculty Perceptions of Technology Distance Education Transactions: Qualitative Outcomes to Inform Teaching Practices and describes the strengths and weaknesses in detail.

European Commission for implementation of Education and Training 2010 Work Program, 2003 in its report says-

a. In order to cope with the fundamental changes that are challenging education communities today, especially with the integration of ICT, it is necessary to consider that ICT is not only a tool or technological resource, but that it is also introducing new learning paradigms.
b. Educational actors, students, teachers, trainers, administrators, etc. need to be empowered through inclusive ICT education policies, which address the broad scope of learners and communities.

c. Teachers' education appears as one of the most important field for addressing the integration of ICT in education.
d. Teacher training should be done "in situ" with a view to the specific educational issues and problems that the teachers have to face.
e. Learning in a technology enhance environment - e-learning – should not be confused with learning about technology.
f. Teacher trainers' policies must go beyond technical skills and empower all educational actors by developing new competencies for teaching and learning with ICT.

A PhD study titled- A study of in-service distance education for secondary school teachers in Uganda: developing a framework for quality teacher education programmes was performed by Agutij.N in Uganda in 2003 explored issues related to-

a. the viability of distance education to meet the increasing demands of education in Uganda, factors impacting this growth, strength and weaknesses of the teacher education programmes that have been run in the country, especially the BEd(external) programme and the possibility of integrating Information Communication Technologies (ICTs) in these programmes.

Uys (2003) gives a descriptive account of a two-year case study based on personal analysis of, and reflection on, factors that contributed to the infusion of instructional technologies to advance open learning at the University of Botswana in his on-line research paper. He followed Leadership, Academic and Student Ownership and readiness'(LASO) model , which suggests that ownership and readiness for change in the part of the learners and academic staff, can be achieved by using strategies such as pilot projects, extensive training, establishment of workgroups and learning communities in every faculty, and use of teams for e-learning courseware development. Following are some of the major findings-

a. The study identified certain success factors like, a clear vision, support of committed leadership, and dedicated personnel/change agents to ensure successful project implementations.

b. Those working in developing settings must contend with issues that contrast dramatically with those in developed settings.

c. Many aspects of the socio-economic and technological environment that are taken for granted in developed settings must be explicitly addressed when introducing instructional technologies for open learning in developing settings, such as in Botswana. These include, among other things, participants' unfamiliarity with new

instructional technologies, inadequate telecommunications infrastructure, unreliable power supply, competition for limited educational sector resources, and the need to provide basic educational facilities.

Shea (Shea, et al., 2001) in their paper says-

a. In developed and even in a number of developing nations' open universities the most popular and common methods of communication used is electronic mail(e-mail), bulletin board system (BBS), Internet (using chat programmes, telephone based audio conferencing, and video conferencing with 1 or 2 way audio via broadcast, and closed-circuit or low power television.

University of Dar Es Salam (UDSM, 2006) has managed to implement the e-learning platform in Tanzania. UDSM has implemented e-learning platform by using WEBCT and Blackboard, which are e-learning proprietary software.

At the University of the South Pacific, video broadcast courses, which integrate face-to-face and distance teaching, are proving useful as a means of scaffolding the transition of lecturers from a conventional teaching-learning environment, towards new ways of teaching that emphasise interaction rather than content delivery. By providing ample support in a professional environment that uses technology to both replicate and supplement the traditional teaching roles, lecturers are allowed a "safe zone" in which to generate new skills while maintaining lecturer comfort.

USAid (2005) report's comment on the ICT policy of Bangladesh is a true reflection-

a. The interface between education and ICTs is noticeably absent from Bangladesh Education Poverty Reduction Strategy Paper. Bangladesh Open University, providing an avenue for higher education to the less well off, should adapt to methods and programs to realize the potential of the new technologies.
b. The Internet, e-mail, teleconferencing and videodiscs should be put to use in distance education programs of the Open University to offer diversified opportunities to learners and to bring the world of learning to Bangladesh.
c. The Open University and other institutions should use on-line course materials from international sources.
d. Easy Internet access for faculty and students should be standard provision for higher education institutions "(JBIC 2002).

Gerea (2007) performed a research study at the NTNU Norwegian University titled-
Selection of Open Source Components – A qualitative survey in Norwegian IT industry of science and technology to gain understanding about the selection of OSS components.

"AAOU On-line Discussion, 2000" added some valuable suggestion in its "QA Framework" through the participation of Hossain (2001).

Hossain (Hossain, Muttaqi, 2006) in their paper- Role of Unesco in shaping learner centred instructional technology in the Distance education system of Bangladesh pointed out that though education institutions in Bangladesh no more show film strips or documentary films the findings from this document-based retrospective study indicate that the proposed future model may include the following steps-

a. To identify if distance education based learning materials need changes in the learning process,
b. To study how the change process is managed by learners,
c. To prepare sound and realistic schemes designed to achieve the desired and identified educational goals,
d. To carry on action research work to devise instructional designs into the components of course material to assist and encourage learners interaction with the material as well as with the peer group,
e. As School Broadcasts continue to be produced it must be jointly planned by the radio organization (Bangladesh Betar) and teachers, and used by teachers and their pupils. It must be broadcast during school hours and knowing that listening to broadcasts calls for a considerable effort of attention special instruction in listening technique should be given,
f. All other forms of technology-based lessons will need to have in-built monitoring and evaluation component so that risk of failure is minimized.
g. Mobile van concept can be retained and BOU should try to procure a number of vans having necessary ICT components so that faculties can get into F2F session with learners of different RRCs (Regional Resource Centres).

Summary on Section: 2.2.3(Tech.)

It has been described in one paper that- in developed and even in a number of developing nations' open universities the most popular and common methods of communication used is electronic mail (e-mail), bulletin board system (BBS), Internet (using chat programmes, telephone based audio conferencing, and video conferencing with 1 or 2 way audio via broadcast, and closed-circuit or low power television; but in reality the situation in Bangladesh is totally upsetting. BOU has all the possibilities to bring learners close to sustainable ICT and the real situation is no where near to action. Even the University of South Pacific is working towards a transition of lecturers from a conventional teaching-learning environment, towards new ways of teaching that emphasise interaction rather than content delivery but at BOU faculty members. In reality BOU is yet to start a pro-active process formula on use of ICT.

The following articles were found out about different aspects of Application of Learning Theories related to Design-Delivery-Evaluation.

Section: 2.2.4(L.Th.)-

A great many authors have supported the need of distance education courses to be structured using constructivism/student-centred and collaborative models.

Ferrier (1998) conducted a PhD study under Deakin University with the title- An Investigation into the Diffusion of Innovation in Technical and Further Education. The project of the thesis examined the diffusion of change within one Victorian technical and further education (TQFE) institute, engaging action research to facilitate the implementation of electronic mail technology. The following were the significant findings-

a. Process of diffusion has four stages- planning, nature of the process, culture and politics.
b. Cultural aspects are significant in the transfer of technologies. Lack of infrastructure and ready access to computers were the significant factors.
c. Transfer of 'culture' towards technology was more responsible than transfer of hardware and software.
d. The '*politics*' component poses interesting problems for teachers in the sense that their capability to entertain, engage and amuse their charges during the day, actually competes with the glitz and glamour and sound bytes and so on that characterize contemporary media.
e. Educationists are going to work hard if they wish to maximize both the benefits of technology and teacher interaction.

Hossain (2009) in her paper- Institutional approaches towards learning spaces and learner autonomy: case of national BEd, described the techniques in use for the creation of LS and LA for TV lessons at BOU along with their strengths and weaknesses.

Easton (2003) felt that due to the physical separation of the faulty/instructor and student, distance education required a constructivist approach.

Bates (2010) was leading an on-line discussion of the topic- The future of instructional design - or my heart belongs to ADDIE.

A relevant section from the discussion of a particular day is downloaded here: June 8th, 2010-

> I also looked at some of things that are not being done very well (or at all) in instructional design. The glaring gap for me was theory or practice or research to determine the appropriate use of face-to-face and online activities in hybrid or blended modes. Another gap was the design implications of open educational resources. We do have theories of learning. Why are we not applying theory more

rigorously to these areas and coming up with new models based on theory that can be tested?

Ventura (1991) in her paper evaluated- the effectiveness of 10 teacher-training institutions of Metro Manila, Philippines. The study determined the effects of context, inputs and throughputs of the subject institutions on the performance and job satisfaction of the graduates (outputs) as perceived by the administrators, faculty, senior students and graduates. Using stepwise multiple regression analysis, the study concluded that the output variables are significantly affected by context variables, i.e. goals and objectives; input variables, specifically faculty and administrators' profile, physical facilities and resources, and cost of tuition and other fees; and process variables, namely, practicum, contents of the curriculum, method of teaching, and requirements for graduation. Ventura's study stressed the importance of evaluating the context, input and process variables as these affect the output variables.

Draves (Draves, 2004) listed ten characteristics which credits distance education for creating better learning environment. They are:

a. Opportunity for the student to learn during her/his own individual "best" time,
b. Place for learning is set by the student,
c. Learning occurs faster,
d. Personal interaction with both the teacher and other students can occur with greater frequency,
e. While working on-line, there are more topics and subjects to access readily,
f. Classroom participants may experience greater diversity by interacting with students that could be residents of anywhere in the world,
g. Online opportunities give the students access to the foremost authorities and experts,
h. Distance learning has been found to be less expensive and more accessible,
i. Online resources of information abound, online classes create virtual communities.

Masood (2004) conducted a study on educational technology aspects presented in the articles published in a journal titled-'A ten year analysis: trends in traditional educational technology literature'. Her study contends that the older terminology of 'audiovisual education' has moved to 'audiovisual communications,' to 'educational media,' and to 'educational/instructional technology.' An interesting finding is that there is an escalating need for learning communities to support the learning environment. She says that-Towards the second half of the study period, the literature revealed that researchers were more focused in inquiry on instructional methods like effects of learner-centeredness, collaboration, and problem-based approaches. This shows that the key to reaching a specific outcome is by applying the appropriate instructional method. Further, if it had not been for the dramatic surge of interest in "constructivist" learning approaches in the late 1980s and early 1990s it is

highly unlikely that this vigorous conversation about the methods coupled with learning environments would have taken place.

Garrison formulated a model (1997) where he identified that- the self management, self monitoring and motivational components are necessary for successful self-directed learning. He says that faculty fades into the background but faculty must also take responsibility for monitoring how successful the students are at self-directing their learning.

Butcher 's paper (2005) titled- Embracing change: quality assurance at the Open University of Hong Kong, summarises that-

a. the OUHK is in the process of becoming a dual-mode university in a mirror image of the normal process whereby a conventional face-to-face institution would embrace aspects of off-campus, technology-based learning to meet learner demand for flexibility and to make more cost-effective use of its expensive staffing resources.
b. It is embracing face-to- face teaching in response to the local preference for full-time study and in order to make additional cost-effective use of its expensively developed course materials and its campus facilities which are under-utilised during normal working hours. At the same time, e-Learning is becoming more popular among its distance-mode students.

Summary on Section:2.2.4(L.Th.)

Garrison's finding in paper 7 seems to be important to redress the sorry situation prevailing at BOU as far as learners' condition is concerned. The present researcher is of the opinion that like Masood, faculty members at BOU should conduct a ten or fifteen years study on use of technology before applying any new technology for the delivery of learning materials.

Section: 2.2.5(Grnd.Th.)

The points laid down by Luca (2009) is very significant in the use of grounded theory, as she says -Postmodern epistemology has influenced debates on grounded theory as a qualitative research method, led to major revisions and to the development of guidelines and quality criteria to manage researcher agency. Luca articulated the reflexive position of researchers as both agents and participants in the research process and provided an overview of post-positivist and constructivist positions, explores major criticisms. She also described a modified method used for a research inquiry into clinical concepts and practices by two distinct modalities of psychotherapists, the psychodynamic and the cognitive behavioural.

Goulding (1999) reviewed and addressed some of the major criticisms of grounded theory in order to explicate it as a humanistic and interpretivist method of enquiry.

Moghaddam (2006) discussed grounded theory as one of the qualitative research designs and described how grounded theory generates from data. Three phases of grounded theory - open coding, axial coding, and selective coding - are elaborated by him.

Isenberg (2006) worked on- the Grounded evaluation of information visualizations. His suggestions are to-

> a. Introduce grounded evaluation as a process that attempts to ensure that the evaluations of information visualizations are situated within the context of intended use. Quantitative evaluation according to him is naturally precision-oriented, but a shift from high precision to high fidelity may be made with the addition of complementary qualitative evaluations.
>
> *b.* To consider that a broader scope and sensitivity to context are important when complex issues such as collaboration, insight, and confidence, need to be assessed. In more general terms, we would like to draw attention to qualitative research approaches early in the development to address difficult evaluation questions later in the process. Just as the sign in Albert Einstein's office read, "Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted", and thus for evaluation to be effective when we determine the things that count, we should not leave out those things that cannot be counted.
>
> c. To take that Grounded Theory doesn't fall in the general category of social research. The 'grounded theory' method is inductive, ending with a theory rather than beginning with a hypothesis.

Ramos (2005) in his work titled- ICT in the curriculum: a grounded theory approach study; presented the content of an investigation using the grounded theory approach. In the field work, Internet, word processor and videoconference were used. The researcher concludes-

> that the ICT have the power to always add something positive to apprenticeship, be it because these resources enthusiasm and motivate the students be it because they offer new opportunities to learn how to read, how to write and how to think, be it still because they may contribute to their social and professional integration.

Her results show that there are no easy or final answers for the curricular integration of the ICT. Technology helps transform teaching practice, but it isn't the only or the most important means of its transformation. And among the numerous factors that contribute to the success of the curricular integration of ICT, the teacher emerges as fundamental. According to her teacher training in the use of ICT and its application in a pedagogical context must deserve very specific attention.

Butcher (2005) conducted a study on the equality assurance side of Hong Kong Open University. The title of his work was- Embracing change: Quality Aassurance at the Open University of Hong Kong. He used Grounded Theory.

Summary on Section: 2.2.5(Grnd.Th.)

The papers presented in the section show that the use of Grounded Theory is gaining importance with researchers dealing with qualitative data. The 'grounded theory' method is inductive, ending with a theory rather than beginning with a hypothesis.

In Moghaddam's paper he described the three phases of grounded theory - open coding, axial coding, and selective coding and according to him data coding process is time consuming but in case of qualitative data the work can be done. Others have brought to book some other sides.

2.3: Discussion

It was found that 'policy/recommendation-design-delivery-evaluation' type of work on use of innovative ICTs in teacher education was not explored so far by any researcher in Bangladesh.

Going through all the above research articles downloaded from Internet and categorised in different sections gave the researcher the idea that due to access of technology quite different types of innovations were tried in developed and developing world, making a distinct demarcation line in between the two worlds. While Bangladesh still struggles through first generation technology in distance education, the developed world is in such interactive use of technology using computer, etc, the digital divide between not only haves and not-haves but also between users and hesitators is very prominent.

Until recently, distance education gave less opportunity for direct feedback from students, thus, it has been found necessary to develop formal procedures for programme evaluation. In the future it may become necessary that individual evaluation projects are carried out with reference to research and evaluation in a number of important settings and report result in ways to give maximum transfer and development effects to the field in general.

Through the works done in Section: 2.2.RBG it was seen that though quite a big number of research study were conducted nationally on teacher education and distance education there is almost none on instructional design. From their field experience international researchers found out that changes are often initiated on the basis of political aims and goals of the society and/or the needs of specific groups.

Findings from the PhD thesis of Ferrier (1998) cited in Section: 2.2.3(Tech) gives the present researcher some idea of what could be found out through the national picture about innovative technology.

Going through the research papers presented the researcher became convinced that the Unesco recommended technique of research-fed issuance of education related policies is necessary to help national level policy setters. A schematic diagram of education related policy setting, is presented here in Figure 2.3.1 by the researcher as a point to start with a 'grounded theory' generation type of research-

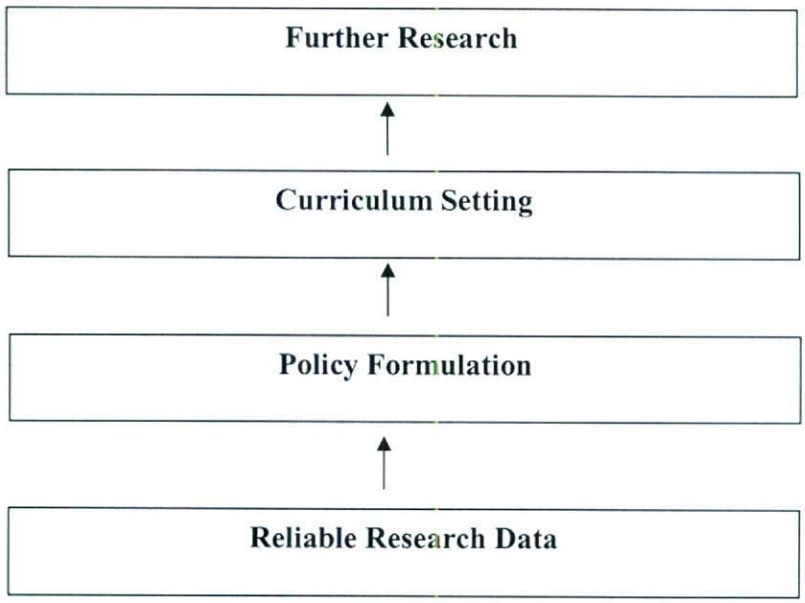


Figure: 2.3.1. Correct Schematic Diagram of Policy Research on National Secondary Level Education Reform (researcher's view).

2.4- Use of Grounded Theory Method for the Conduction of the Present Research

According to the Figure: 2.3.1 scheme it becomes thus necessary to guide the present research work through collection of qualitative data type information to search for the presence of ID in the preparation of course material for distance mode learners in Bangladesh. Grounded theory generation method can be used in this case.

The grounded theory originally emerged from the work of Glaser and Strauss (1967). It challenged the arbitrary division of theory and research and proposed that qualitative research is legitimate in itself without it being regarded as a precursor to more quantitative

methods. It is an innovative approach to social research bringing together data generated from the field for analysis and for developing rich conceptual models that accurately describe and are grounded in the data. As such, grounded theory is inductive, is concerned with discovery and does not rest on hypothesis testing but on generating hypotheses imbued in the data.

Lepper and Riding says-

> The objective of grounded theory is not verification, but theory building. Glaser and Strauss did not see grounded theory replacing verification, but rather as supplementing the scientific process with a specific and systematic method of developing theory from an empirical, rather than a conceptual, base (Lepper & Riding, 2006: 118).

Grounded theory is grounded in social action, is fluid in the way it evolves and unfolds, has as its goal the 'non-mathematical process of interpretation' (Strauss & Corbin 1998: 8-14), and arrives at meaningful understanding of events, particularly of human action and human experience. The method is concerned with building theory drawn from aspects of a lived experience that are normally taken for granted. With its 'bottom up' approach the research process and theoretical development are united.

Piantanida says-

> The procedures of grounded theory provide interpretive researchers with a disciplined process, not simply for generating concepts, but more importantly for coming to see possible and plausible relationships among them. It is the researcher's portrayal of these conceptual relationships that constitutes a grounded theory. Within an interpretive epistemology, such grounded theories are understood to be heuristic, not predictive, in nature (Piantanida et al. 2002: 3).

And in the words of Strauss and Corbin-

> Grounded theories, because they are drawn from data, are likely to offer insight, enhance understanding, and provide a meaningful guide to action (Strauss & Corbin, 1998: 12).They suggest the following goals for grounded theory:

a. Build rather than test theory.
b. Provide researchers with analytic tools for handling masses of raw data.
c. Help the analysts to consider alternative meanings of phenomena.
d. Be systematic and creative simultaneously.
e. Identify, develop, and relate the concepts that are the building blocks of theory.

Grounded theory uses 'three levels of coding':

Level 1- Initially "open coding" is adopted, this is the stage where the raw data, for example policy documents, project proposals, are initially examined, and are coded through a process which fractures the document into discrete threads of datum. These data are eventually collated and accrued to form categories of similar phenomena. The process of open coding examines the data without any limitations in its scope, and without the application of any filters, thus all data are accepted and none are excluded, this allows the researcher to look for patterns which may lead to social processes which may be of eventual interest.

As the categories begin to fill, those that are most dense become known as core categories, by core coding (Glaser 2002).

Level 2- As core categories become apparent, the researcher switches to the second level of coding, known as 'selective coding'. Selective coding allows the researcher to filter and code data which are determined to be more relevant to the emerging concepts. Therefore only the most pertinent passages of a transcript are used and coded, and to facilitate the preliminary research questions are continuously reformulated to encompass the new and more focused direction of the research.

Levels 1 &2 can be combined to come to level 3.

Level 3- The final stage of coding is known as "theoretical coding". Theoretical coding occurs when core categories have become saturated. Saturation is both a peculiarity and a strength of grounded theory.

Eventually, after a certain period of data collection, a point is reached where no new data result from furhter data collection, this is the point of saturation-

> One keeps on collecting data until one receives only already known statements(Seldén 2005).

Unlike other methods of qualitative analysis which acquire rigour through multiple levels of confirmation or triangulation (Mertens 1998) grounded theory builds an analytical case by constantly seeking new categories of evidence.

'Theoretical coding' examines these saturated categories and provides the researcher with analytical criteria which assists in the development of conceptual relationships between categories and their relevance to the literature (Glaser 1992). As the coding procedure before this phase worked to fracture the data and cluster them according to abstract similarity, 'theoretical coding', along with sorting, knits the fractured pieces back together again to conceptualise relationships between the hypotheses derived through open and selective coding.

At the end of this chapter it is thus decided that the present research study will be on formulation of a grounded model for the 'innovative uses of ICT in distance education'.

3.1- Introduction

Qualitative research, generally emphasises the generation of hypotheses and theory from the emerging data; data that can be related to the perspectives of those who are being studied. Vuillamy (1990) insists that it becomes impossible to specify in the proposal the kinds of avenues, which will eventually be pursued. According to Vuillamy precise nature of qualitative research cannot be pre-specified, and whilst many of the most interesting issues for analysis do emerge during the study, it is nevertheless essential to begin with some kind of framework for the research. Nisbet (1997) argues that educational research design should rather focus on analysis of problems rather than simply seeking to supply answers to questions. Burgess (Connole, 1993) gave some valuable suggestions to the qualitative researchers –

> In case of qualitative method, studies may be designed and redesigned and a researcher can turn this flexibility to her advantage, as a rigid framework in which to operate is not required.

The term qualitative research is given different meanings by different people. Miles and Huberman's (Miles, 1984) definition is suitable for nature of the present work:

> Data concerned appear in words rather than in numbers.

Burgess (1985) gave a constructive characterization of qualitative research:

> The researcher works in a natural setting, studies may be designed and redesigned, the research is concerned with social processes and with meaning, data collection and data analysis occur simultaneously.

Nature of the data sought for the study in question fixed that most of the data had to be collected from printed policy documents, project reports, and hence qualitative in nature. The researcher conducted the research work using a number of classification techniques, mostly qualitative in nature and used a blended model formed by combination of appropriate learning theory and a simplified version of Dick-Carey Model (DCM) (1998.

Using a grounded theory approach of 'interview & document search', qualitative data were coded in three levels to generate rich, explanatory data from education related documents on innovative uses of technology in distance education. The focus was put on school science teacher and distance teacher education. Grounded Theory was the preferred method as its design is systematic. This method seeks to generate a broad conceptual theory that explains a process, action or interaction about a substantive topic.

3.2- Generation of an Appropriate Grounded Theory

According to the long-standing norm, any education related project starts with policy formulation then goes through design-delivery-evaluation stages of implementation. As the present study takes a good number of educational institutes and projects for a document-based evaluation its main task would be to find evidences of proper formation and functioning of design-delivery-evalaution stages in instilling 'LS&LE' in the learning materials prepared for the BEd distance learners and analysis the outcome formulate a sustainable 'grounded model'.

It appeared necessary to evaluate, as far as possible the design, delivery and evaluation phases of each of the institutions formed for providing 'innovative uses of ICT in distance teacher education.

As continuous and thorough reading through a good number of related technical reports published by Unesco intrigued further interest in the researcher to collect information about the activities performed in this land concerning innovative use of technology in secondary education as well as teacher education. Thought was also given to find out the suitable data presentation format and a thoughtfully formed Policy-Design-Delivery-Evaluation model. It was necessary to make a continuous chain of dialogue, interview with the concerned people working in the field to authenticate each and every portion of the document data.

As was found in course of time, data were mostly qualitative and being in written text format, quite lengthy, so targeting a "Grounded Theory" by the 'generated data fitted model' was planned. With the research data obtained by three levels of coding it appeared necessary to head towards producing a grounded theory, as grounded theory is a qualitative approach that generates theory from observation. It provides the structure often lacking in other qualitative approaches without sacrificing flexibility or rigor. The resulting theory is an explanation of categories, their properties, and the relationships among them. The results lead to an evolutionary body of knowledge that is grounded in data.

A workable model of insertion of ID throughout the 'design-delivery-evaluation' process of course materials for distance learners would be drawn through the research findings. It becomes evident that this type of methodological inquiry requires a degree of rigour and grounding analysis in data. In the present study grounded theory was generated by systematic analysis of all the collected and generated data.

On the application side this "Grounded Theory" may even lead to the construction of proper instructional design component to incorporate ICT into teacher education programme BEd of Bangladesh Open University.

3.3- Design Decision on Data Collection, Generation

Each of the aspects of the anticipated evaluation plan was used as a lens with which to determine and evaluate the four stages (e.g.: recommendation, design, delivery and evaluation) of the ID components of the distance teacher education programmes run by- AVEC, EEC, SBP, NIEMT, BIDE, BOU, BOU-TQI-SEP.

It was felt that the most important design decision was to take a lead from the research objectives/questions that were generated and make decisions on method in the light of them. The methods that were chosen could be described as eclectic- the criteria of choice being to select those methods that seemed likely to provide most insight into the research questions

Core coded data collection of this research actually began in 1993 when the researcher joined BOU. Seeing huge piles of student cards and other informative materials in the long corridor of the tiny Media Centre of BIDE she started collecting academic and social information on students of BIDE and getting some information from the officers present then and there. From that time also she started using appropriate portion of collected data in composing conference as well as journal papers. This way she presented the very first paper at an international conference held in India in 1993. The second paper was presented at an international conference held in 1994 in the Netherlands.

It was sensed that dealing with a complex research study that looks at the use of innovative type use of ICT tools is a problematic task. When one deals with emergent innovations, s/he is in a territory of uncertainty. Emergent innovations, given their not very well defined characteristics, require qualitative indicators of change.

The ultimate aim of this study was a thorough review of the situation from 1948-2010 to suggest future deliverers of the newly formulated BEd programme at BOU and what technology aspects of the programme can be incorporated; what should be replicated and what aspects should be altered or discontinued and finally what aspects should be added to face the demand of the time.

Literature search done in Chapter Two and the concerned part shown in Table: 1.2.1 of Chapter One, indicated that

a. the year 1948 is the starting point of recommendation phase related to use of technology in classroom teaching

b. 1956 is the year when basic work for Technology-based school science teaching started,

c. 1985 is the year when distance mode teacher education programme BEd were introduced in Bangladesh.

The intention of the researcher with the present research work is to conduct a grounded evaluation on the use of instructional technology starting from the curriculum setting stage through text material production for BEd programme and for school science teaching; the starting point for this search is the policy/recommendation of 1948.

Data Generation Procedure

Choosing the right evaluation design is complex because each has its own strengths and weaknesses. Some are more reliable than others, but a design that works well in one situation may be completely inappropriate in another. The present evaluation blended components found in the evaluation reports with models that trace their roots to Grounded Theory, providing a framework for the evaluation of a number of national distance education programmes of all their policy formulation-design-delivery-evaluation phases.

Isenberg (2008) et al. says they used qualitative data in their study commonly coming from one of four basic types: observations, interviews, documents (written artifacts), or audio-visual materials. As the present study involves the use of special type of -data generation-collection-coding instruments, the steps of ground theory data collection were followed.

The design and development of the data collection-generation procedure of this study took place in several stages:

Stage 1- A definition of the purposes related to the questions that informed the study was developed. This process involved the examination of an existing model of systematic instructional design like DC model.

Stage 2- The criteria derived from the existing instructional design models of all the institutes taken under this study and relevant portion of the downloaded papers helped the researcher to form clear idea as how to search for or generate data from interview-followed by data generation. Throughout the whole procedure the generated data were coded like: initially- open coding, formation of selective categories, core coding, theoretical coding until the grounded theory took a certain shape.

Stage 3- Interview, though held frequently and in the most informal manner always inspired the researcher to develop further the data generation procedure. This was the most difficult part-which way to proceed, which information to preserve to be made into open coded data, which to put into reserve, which to discuss in the next meeting with the population administrators, officers.

Stage 4- Each time successful data generation inspired to go into next step, failure led to re-model the focus to get more open coded data.

Stage 5- In this stage open coded data were adapted for selective coded data.

Stage 6- In this stage theoretically coded data is generated and a grounded theory is formulated from them.

Data Generation

The starting point of each type of data generation, collection was interview: one-to-one, one-to-many that were held to gather basic information. Each interview was followed by the search for detail data through related documents that were to be traced also.

From the beginning the plan was to generate data surrounding the topic-to find the suitability of instructional design in the task of creating 'LS&LE' in text materials for science teaching and teacher education programmes.

Part of the appendices contain excerpts from a good number of documents that helped develop the coding scheme of the two types of ultimate coded data- SCD & TCD.

The study depended mostly on non-visible tools for the location of spot form where open coded data were likely to be found out. The chief (executive) officers (project directors in a few cases) responsible for offering all technology based-learning were constantly consulted for trying out new direction. Once the components of the evaluation were determined, the evaluation plan was slowly developed.

Following each f-2-f or telephonic interview the data collection-generation of the concerned field included areas of -

1. All the concerned recommendations made by different education commissions since 1948
2. General preparedness in the design stage of the programmes;
3. Environment of the design stage of the instructional design components of the programmes;
4. Problems, needs, assets, and environment of the delivery stage of the programmes;
5. Changes in the organization of the classroom environment;
6. The programme focus and programme offerings with the identified objectives (focusing on students' cognitive development, learning habits /cognitive aspects of learning;
7. Aspects of the technology–based course materials and learner support services;
8. Attitudes of learners towards radio broadcast/use of ACCS (Audio Control Console Set);
9. Staff training and its relations to technology/ICT-based learning innovations.

Numerous considerations were explored when deciding on how the data would be collected and via what instruments. In this evaluative research the extensive period of immersion prior to intensive field- work in the form of professional involvement provided confidence that the restriction of scope through the formalisation of the research questions were legitimate. From these, decisions on the most appropriate instruments to collect data could follow.

The process comprised of the following parts-

- Interview sessions (non-formal),
- Note taking of the important points,
- Finding out accurate detail about some important topics from ICT perspective by document search and identifying them as open coded data,
- Continuing with necessary set of interviews or FGDs,
- Collecting-generating SCDs and TCDS.

Interviews were conducted with each of the programme administrators/faculty members and technical officers with the mutual condition that no audio-video recording will be done. Interview patterns varied from telephone to face-to-face talks and each lasted in between twenty minutes to one hour followed by 'after the session note-taking of summary' type, solely in paper-pencil form. A significant amount of data was painstakingly collected from non-formal face-face interviews of other available concerned personnel of all the institutes. As most of these people except a few are still on the job they prefered not to be named, neither did they allow the interviews to be recorded electronically.

All available documented data (meeting minutes, proposal forms, reporting forms and other written instruments) were collected, read, re-read to find out coded data from them.

Each time, following an interview, detail data was searched and collected from all the available sources like-

a. All the available Education Commission Recommendations (starting from 1948),

b. AVEC, EEC, SBP and NIEMT, BIDE and BOU.

c. Regarding 'design-delivery-evaluation' type policies and their implementation direct interviews of the chief or the main administrative person related to the initial phases of all these institutions were taken.

d. Collection of data was by means of f-2-f, telephone interview, focus group discussion of the technical officers of all these institutes.

e. In case of BOU the researcher had access to all existing data necessary for the study. Here existing data, such as the course materials of BEd, programme documents were all accessible and available. The collection and review of this data and other competitive information was relatively straightforward. Permission from the BOU authority to use the data was taken.

f. Input was also sought from students enrolled in all the BEd programmes, like- BEd BIDE, old BEd of BOU, current collaborative BEd of BOU-TQI-SEP.

g. All related and available Unesco reports.

For the present study a variety of data sources were exhaustively searched to address the research objectives. Formulation of the grounded theory asked for related national research data also. As actual research study period spans from1948 to 2010 the researcher obtained those from published research works, mostly through Internet search.

Although there had been no prior research-based programme evaluation, there had been project evaluation activities occurring throughout each programme's existence. Some of the projects had been assessed by an external team and others produced an annual report by the project directors. All available documents, reports were taken into consideration.

Documents were searched, consulted, photocopie, downloaded form NAEM Library, DTTC Library, BANBEIS Library, Unicef Library, Internet.

3.4- Classification of Data

When a significant amount of data was accumulated it was decided to bring them out and re-classify all of them. As is necessary in the generation of a 'Grounded Theory' data generation and classification continues till data generation reaches a saturation point. Only at this stage final classification is possible. In the final stage of classification of data of this study the following categories were retained-

generated 'SCD' and 'TCD', 'PD''EV.P'. They are presented in Chapter Four under the headings and acronyms of: Policy Implementation (PI), Policy Anomaly (PA), creation of Learner Space and Learning Environment (LS&LE), Evaluation of Evaluation Reports & Research Works (RES). For the sake of precision and clarity, Open Coded Data were generated and preserved in draft form only.

One of the main focus was to find the evidence of learner space and learning environment.

Collected data on each of the phases/institutes were put in the right place among the categories.

3.5- Data Analysis Process for a Grounded Theory

The sustainability aspect of this retrospective evaluation assessed the extent to which the programmes' design-delivery-evaluation stages were applied to the construction of instructional design which is aimed to contribute to learning.

Data analysis was done in two steps-

a. Analysis of the obtained SCDs & TCDs (Selectively Coded Data & Theoretically Coded Data respectively);
b. A seven question-based analysis.
c.

It couldn't be agreed more with what Shulman (Ferrier, 1998) stated-

> Researchers conduct research in a field to make sense of it, to get smarter about it, perhaps to learn how to perform more adeptly within it.

The immediate motive of this study was to be able to make certain research oriented recommendations which can be tried in –

- the implementation stage of the up-coming national education policy (2010);
- review stage of SoE-TQI national BEd;
- ICT policy formulation stage of BOU.

3.6-Institutional Permission for Data Collection-

Written permission was sought from the BOU authority to collect necessary portion of the raw documents from its different sources as BOU finally inherited the surviving documents of AVEC, SBP, NIEMT, BIDE.

3.7- Validity of the Correctness of Steps Taken-

The correctness of the steps taken for this (huge quantity of) data search was confirmed by Burgess's (Miles, 1984) definition of qualitative research:

- the researcher works in a natural setting,
- study may be designed and redesigned,
- the research is concerned with social processes and with meaning,
- data collection and data analysis occur simultaneously.

Once the data search started it was realised by the researcher that dealing with a complex research study that looks at the use of innovative type ICT tools in a country where there is still no general education policy and as such there is perhaps no tested "policy formulation model", is a problematic task. When one deals with emergent innovations, s/he is in a territory of uncertainty. Emergent innovations, given their not very well defined characteristics, require qualitative indicators of change.

It is hoped that the whole lot of qualitative data presented in this research study leaves the opportunity to interpret 'participant experience' viewed through the researcher's lenses. That is why chunks of data were presented in undisturbed format. It was considered to take this process as mediated by researcher impact on participants' attempts to share and understand their world.

The researcher tried to remain thoroughly objective while searching data of each of the components to utilize the ideas behind the ID models.

3.9: Triangulation of Data-

All information of this study is thoroughly based on existing data. Way of tracking documents were designed and constructed with great care to facilitate authentic data collection.

Though not very essential in grounded theory, triangulation effect of collected data from different sources ensured the validity of the primary document data. Triangulation techniques applied as often and as much as possible were applied to collect data from different sources which ensured the validity of the primary document data. The researcher was always cautious about collecting data having strong evidence of validity and reliability. It may be mentioned here that this triangulation effect really brought result as it was quite often found that statements in the evaluation reports of NIEMT and BIDE didn't match the suggestions found in the project proposals of the same, this was specifically true for BIDE. But with all sincerity and efforts it still remains areas where more data were for the benefit of the research.

The researcher was always cautious about collecting data having strong evidence of validity and reliability.

Information collected from records of equipments that were purchased by heads of different institutions was triangulated by telephonic interview with the technical officers.

The entire research process tried leaving any kind of personal bias at bay.

3.10- Limitations of the Study

As is the accepted speculation of grounded theory formation data all types of data mentioned in the data generation section couldn't be found. Open coded data are not shown in Chapter Four due to the demand of huge space. Its framework though is shown in an Appendix.

A significant amount of data was painstakingly collected from non-formal face-face interviews of the concerned personnel of all the institutes. As most of these people, except a few are still on the job they prefer not to be named, neither did they allow the interviews to be recorded electronically.

CHAPTER FOUR

GENERATION, PRESENTATION & ANALYSIS OF DATA

4.1-Introduction

The general discussion part of Chapter Two on the research contents of the literature review revealed that '(policy/recommendation-) design-delivery-evaluation' type of work on innovative uses of ICTs in school science and distance education weren't explored so far by any researcher in Bangladesh.

In order to redress this shortcoming, the present researcher did put herself in the role of an evaluator-formulator and tried to generate a theory on policy formulation from the very ground level. In Chapter Two it was mentioned that one of the prime objective of this study has to be to identify the proper functioning of the design-delivery-evaluation stages of ID (Instructional Design) based 'LS &LE' with innovative type uses of ICT'.

This chapter starts the data analysis procedure of the present study.

As there are three types of document data analysis: tracking, content analysis, and case study aggregation, for this study as and when the situation arose the best fitted type was chosen that could lead the researcher towards formation of a grounded theory. It was already justified in Chapter Three that researchers adopt ground theory seeing that this sort of theory formulation was relatively ignored till now, or has been given only superficial attention in the national research field.

The researcher went for a steady phase of reading through all the easy as well as hard to find available government documents. After quite a lengthy time period, some preliminary and foundation data were found which seemed to direct the researcher towards the specific area of research already selected in chapter one. They are placed here in chronological order in the Table: 4.1. Each base data leads to a base point and they are marked as a, b, c1 andc2.

Table: 4.1- Foundation Data for the Research

Time	Base Data	Base Point
Dec. 1939	A radio station was set up at Dacca (at present spelled Dhaka) way back in 1939 - Broadcasting was started in the region during WWII... and in December 1939 broadcasts directed to the British Colonies began from a 5kW medium wave transmitter at Mirpur (CBA, 1983).	**a:** Functioning of a radio station.
Jan. 1948-	Recommendation from- The Proceedings of the First Meeting of the Advisory Board of Education for Pakistan – (Page 5)-10. Item vii: The formation of community centres equipped with books and radio and provision of mobile vans for the exhibition of	**b:** Recommend ation on the use of radio, mobile vans for the

	appropriate films at such centres. (Page 21)- 4: In the selection of foreign educational films and in the production of educational films in our own country, a small Committee of Visual Education, consisting of teachers and officers of the Education Division may be set up in due course to ensure proper selection of educational films and themes. 5: Use can also be made of educational broadcasting in the task of educational reorganization and development. Radio can be useful in this matter and for this educational broadcasts may become the concern of the Central Education Division who will ensure their integration in the educational conception under discussion.	exhibition of appropriate film for education purpose.
1957-	Financial Grant linked to Recommendations on Correspondence Schools- 1. In order to provide facilities…, we recommend that an experimental start may be made with a system of correspondence schools. 2. A few selected institutions should be asked to open a correspondence section. For example ..., one training college, and a few good high schools may conduct these courses under the supervision of the Directorate. 5. An initial grant of one lakh of rupees may be made, to be renewed according to the expanding activities of the department.	**c1**: Financial grant linked to recommendations for starting design-delivery-evaluation process.
1959- Unesco	"*The* United Nations .... assisting the less developed countries to develop their press, radio broadcasting, film and television. ... it has been recognized by the United Nations that media plays a very important role in education also."	**c2:** UN recognition that media plays a very important role in education.

The "base points **a** through **c2**" show that the ground works for audio-visual education components in this land were facilitated greatly by UN technical help. Based on these base points and the thematic elaboration in Chapter One the research methodology was fixed.

Table 4.1 shows that the formal recommendations on use of innovative technology in education started in 1948 and thus this study has to cover the whole period from 1948-2010. It was also seen that since 1956 a number of educational institutes tried to incorporate innovative ICTs in the delivery of learning materials for their learners.

4.2- Data Generation & Presentation on Design-Delivery-Evaluation Stages

4.2.1- Data Generation & Presentation by Selective Coding (SCD) & Theoretical Coding (TCD)

In the following Units and Sections of this part of the chapter generated 'selective' and 'theoretical' data are presented under the headings and acronyms of-

TCD- Theoretically Coded Data,
SCD- Selectively Coded Data,

QLD- Qualitative Data,

PD- Picture Data

PI- Policy Implementation,

PA- Policy Anomaly ,

LS&LE - Learner Space and Learning Environment ,

EV.P- Evaluation of Projects and research works.

For the sake of precision and clarity, Open Coded Data were preserved in the draft work diary and its units are presented in a Table format of Appendix 15.
SCD & TCD generated here are presented in three successive units where the second unit has two sets -

4.2.1.1- PI & PA on 'Innovative Uses of ICT' Unit

4.2.1.2- Creation of LS&LE Unit

4.2.1.2a: QLD.LS & LE Data Set

4.2.1.2b: PD. LS & LE Data Set

4.2.1.3- EV.P Unit

Following the accepted norm for "grounded theory formulation" some relevant pictorial data are generated in the second unit with appropriate core picture data. At the end of each presentation of significant group of selectively coded data a summary is presented under the heading of Generated Data. Each of these Generated Data next is then listed as corresponding Theoretically Coded Data.

Analysis of SCD & TCD encompasses all the generated data.

In Chapter Five all these theoretically coded data will be listed a sfindings and then analysed further through a seven step questions to design the respective ID models. The work of Chapter Five will finally culminate in the formation of a "Grounded Theory".

Unit 4.2.1.1- 'Policy Implementation (PI) & Policy Anomaly (PA) on Innovative Uses of ICT'

The following are the data titled falling in bot implemented as well as anomalies categories of the recommendations and policies on innovative uses of ICT in school science and teacher training programmes. The first part of the Unit takes the heading of PI while the second part has the heading of PA. Each theme has a running number heading attached to the acronym of the heading.

Policy Implementation (PI): On 'innovative use of ICT'

PI. 1-

Theme: A Comparative Picture of Policy Designers' Visionary Goal reflected in the Use of Foreign Fund.

SCD.PI.1-

This theme generated selectively coded data with the help of some comparative data from East Pakistan and India:

A strange comparative picture is found during the time period of 1959-60s, in two neighbouring countries.

Country of Case 1- East Pakistan:

a. Ford Foundation helped in the transformation phase of a number of schools in to pilot schools in Bangladesh.
b. The University of Chicago Pakistan Education Project, in the 1950-60s sent head teachers and science teachers for training to Chicago to introduce film show in classrooms.
c. The expenses were borne by Ford Foundation.
d. Clinton B Seely, who taught as science teacher at Barisal Zilla School for the period 1963-65 got three months training at Chicago University (collected from one of his web interviews).

Country of Case 2– India:

a. During the same time period of 1950-60s the following assistance from Ford Foundation was delivered to India–

Television entered India three decades ago on September 15, 1959 as a pilot project funded by the Ford Foundation. It started with 20 TV receivers in and around Delhi, and transmitted one hour educational and development programmes twice a week. (Chaudhury, 1992)

Case 3- Remark of Unesco-

A Unesco report titled Mass Media in the Developing Countries, 1961- stated it this way-

Many decisions are entailed as to the timing and character of a national television service, and while those will vary from country to country, much can be gained from international co-operation and an exchange of experience at the earliest stage. In view of television's potentialities as an instrument for teaching, educational programming should be given very high priority from the start.

TCD.PI.1-

Comparing Cases 1 & 2 in the light of the remark of Unesco (Case 3 of PI.3) it can be said that –

Far sightedness of the policy makers can take their country to where their policies foresee. India used Ford Foundation money, technical expertise to go straight for creation of TV lesson and it was wiser than the East Pakistani decision. Radio lesson in East Pakistan could have been designed locally. An ahead-of-time ground preparation for acquiring ID skills on telecast lesson was for India more beneficial in the long run.

PI.2-

Theme: Setting up of the Institute of Educational Radio and Television.

SCD. PI.2-

1. Recommendation of 1979 says -

An autonomous type Institute of Educational Radio and Television should be set under the Ministry of Education. Main objective will be to produce educational programmes for radio, television.

This Recommendation on 'innovative use of ICT' was found to be materialized hurriedly in 1981 by naming 'the institute formed by the merger' of AVEC & SBP as NIEMT (National Institute of Educational Media and Technology).

2. The SBP-BIDE (or NIEMT) merger idea was actually generated initially in the project proposal of BIDE submitted in 1981, like- to avoid duplication and to make better use of limited resources and trained manpower it is strongly felt that the Audio-Visual Education Centre be merged, along with its staff and resources with BIDE.(PP1980, page 3(8)).

TCD. PI.2–

Going through the SCD the researcher sums up that the design-delivery-evaluation stages' activities of both the institutes NIEMT and BIDE were curtailed resulting in the deprivation of the learners of their ICT benefits.

PI. 3-

Theme: The running of the innovative project- School Broadcasting Programme.

SCD.PI.3-

1. The Evaluation Report- School Broadcasting Programme, 1983 cites an unapproved work done regarding School Broadcasting Programme- The ADP(Annual Development Plan) allocation for the project SBP was stopped with effect from 1.7.82 and the project was merged with the 'unapproved' project of Distance Education (formation of NIEMT) (Report, 1983, page 9).

TCD. PI. 3-

It seems NIEMT was hurriedly formed by the merger of AVEC & SBP to get the financial allocation of SFYP. Financial allocation of both AVEC and SBP were taken in to NIEMT but contrary to the objectives of AVEC, SBP the total 'trained manpower' was then involved in introducing distance learning instead of producing 'interactive type radio, television programmes'. Though it was mentioned- It is better to use radio-television in the proposed teacher education programme, 'follow-up short teacher trainings' being the feedback part- on use of ACCS was left undone as no trace of it was found in any document.

PI. 4-

Theme: Progress of ICT in Education Policy- ICT Policy Making.

SCD.PI.4-

1. ICT Policy Making, 2002- 'Technology in Education Policy'-

1a. IT Related Distance Education Scheme of the Bangladesh Open University will be expanded through the use of TV and Internet. Private TV Channels should be encouraged to start IT Education Program.

1b. IT-Capacity-Building of the Teachers Training Institutes (TTI) will be taken up –

intensive post-graduate diploma courses will be introduced.

1c. Pre-service and in-service training programmes will be initiated.

1d.To address the issue of deficiency in English and Mathematics education, a crash programme shall be taken up to train teachers.

1e. Use the potential of ICT for delivery of distance education.

2. A web-based research paper titled- Policy coherence in the application of ICTs for education in India & South Asia (Kumari, 2009) brings a picture on the situation of ICT in South Asian countries as represented below in Table PI.4.

Table: PI.4- Situation of ICT Policy in South Asian countries-

Countries	Situation of ICT Policy
India, Pakistan, Sri Lanka	Distinct ICT in Education Policy
Bangladesh, Nepal, Bhutan, Afghanistan	Education sector plan in ICT Policies
Bhutan, Afghanistan	ICT Plans in Education Policies
Others	National Development Plan, in Maldives

The same paper makes the following comment about institutional capacity, political and administrative will-

This is the most critical constraint in the South Asian region where there is little institutional and administrative capacity to translate good policies from paper to real initiatives on the ground. For example, Bangladesh ICT Policy 2002, of the 103 Policy directives in 16 areas only 8 was fully or largely accomplished by 2008 when the review was conducted.

3. A research paper of 2007 says – Open University of Tanzania has already enacted its won ICT policy which guides on how to use ICT to fulfill the functions of the university that are teaching, research and consultancy (Sife, 2007).

4. TQI-SEP (2006) report titled- Capacity Assessment Study Report on Bangladesh Open University says that BOU develop an ICT policy based on solid information and research results and that an incremental implementation plan be prepared (page 13).

5. Unesco (2004) published a study titled- Needs assessment of ICT in Education Policy Makers in Asia and the Pacific; suggests to go according to its policy framework.

TCD. PI. 4-

Going through all the above points it seems there is little institutional and administrative capacity to translate good policies from paper to real initiatives on the ground. It is not enough to make plans to equip schools ad-hoc with personal computers (PCs) and train teachers to assure their use to prepare pupils for the demands of the 21st century. ICT in itself is not going to radically change education systems for the better. An overall view of what education should be seeking to achieve is needed for ICT to be utilized to their full potential within education systems.

PI.5-

Theme: Project BOU -TQI-SEP- ID Model

SCD.PI.5-

PP of TQI-SEP (2006) says-

Instructional Design for new BEd-- The instructional design process is critical and through this approach careful planning of all aspects will result in improved learning. It is a process that requires participation and dedicated time from faculty and staff from a number of areas of the university.

During course book preparation the expatriate consultants organized a number of workshops to explain different aspects of ID. But radio-TV lesson preparation stage is yet to be effective.

TCD.PI.5-

The cultural clash between the expatriates and the local writers, radio-TV lesson presenters seems to be big impediment in delivering the identified objectives.

Policy Anomaly (PA):

The policy anomalies on innovative uses of technology in school science and distance teacher training programmes that could be traced by the researcher are presented here under the heading of PA.

PA.1-

Theme: BIDE Project Model

SCD.PA.1-

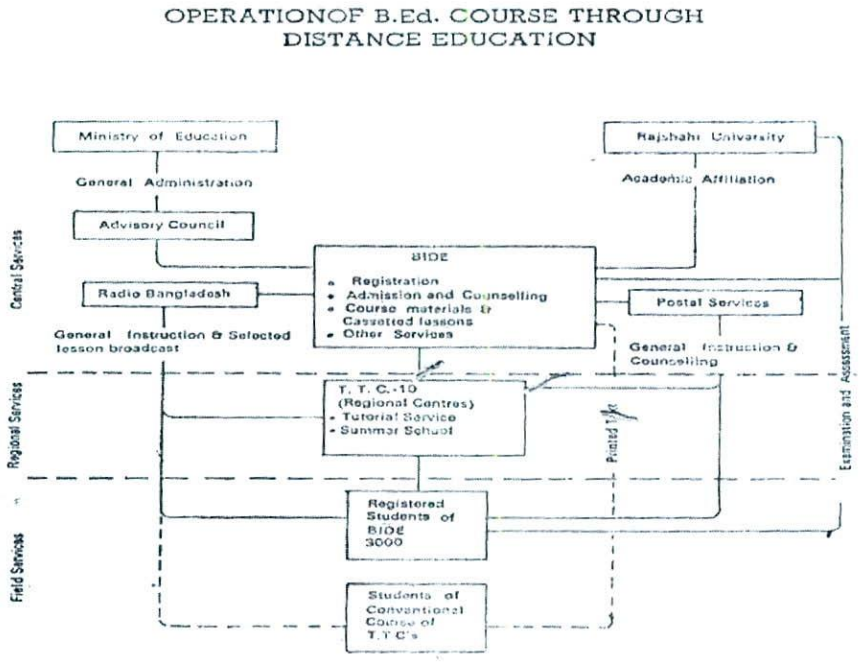


Figure: SCD.PA.1- The Project model of BIDE- as was found from document.

Looking through the model it is seen that there is no indication about how the radio lessons are prepared. There is indication about preparation of cassetted lessons though which BOU couldn't provide till now.

TCD.PA.1-

When the BIDE model(Figure: SCD.PA.1) is analysed with respect to the DC Model(Figure: 5.3.1) it is seen that it had no detail like writing performance objectives, developing assessment instruments, developing instructional technology, etc before

starting the production of course materials. Hence, in reality the model has no ID components as such.

PA.2-

Theme: BOU Project Model.

SCD.PA.2-

FIGURE 2
MODELS FOR MATERIALS DEVELOPMENT

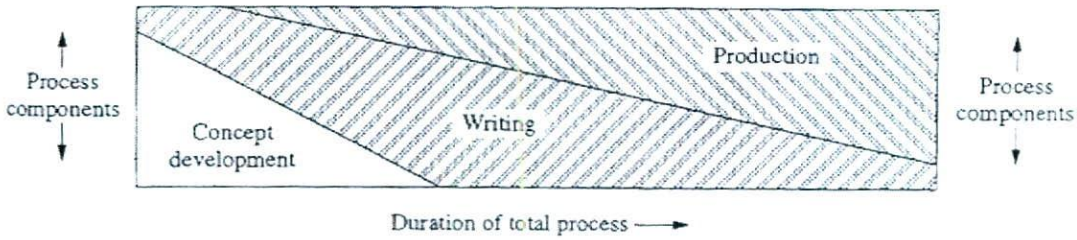


Figure SCD.PA.2- The ID model for BOU at its project stage as was suggested by Prof. John Dekkers, consultant of BOU project.

TCD.PA.2-

It seems to look very incomplete as far as ID components design-delivery-evaluation stages are concerned. During the project period the faculty at work at SoE most of the time didn't put any emphasis on this model.

Well drawn plans should consider all the adverse effects that the innovative ICTs can bring with them. The BOU project period model is also very much incomplete in comparison to the DC model.

PA.3-

Theme: Gap between the Plan and Actual Performance of Projects.

SCD.PA.3-

Second Five Year Plan (1980-85) says- a critical appraisal of progress reveals a wide gap between the plan targets and actual performance. This was due to marked departure from the programmes envisaged in the plan. Developments followed the pattern of marginal expansion in the traditional lines. The pressure group, having access to the authority, had

considerably larger share of allocation than actually due. As a result, the fruits of development did not reach the doors of those who actually needed it most.

TCD. PA. 3-

In short, it was officially recognized that educational development could not bring about equality of educational opportunity as was envisaged.

PA.4-

Theme: Teaching through Films- for School Level Learners.

SCD.PA.4-

1. One of the Objectives of Supplementary Scheme of AVEC, 1962 was justified as- In the approved scheme there is no provision for remodeling the audio-visual materials purchased from abroad, to satisfy local need.

TCS. PA.4-

The present researcher's evaluation of the supplementary scheme is that by getting Supplementary Scheme approved, AVEC would do cultural translation of the films procured in English language.

But in reality no evidence of this type of work was found in the whole period of AVEC as none of the films listed in the two catalogues of film (in English) tallied with those in the list of films of AVEC brochure. In the production stage, the much needed translation of the films was not coordinated with the stated objective.

PA.5-

Theme: Exhibition of Films for the Learners.

SCD.PA.5-

Case Study: Interview response of Seely regarding one pilot school (Barisal Zilla School - BZS)-

Description of the case: it was possible on the part of the researcher of this study to trace Mr. Clinton B Seely, who worked in 1962-63 at BZS as the science teacher "to teach by showing science films with the film projector". This former-teacher was contacted by e-mail with a request to answer a few questions. The e-mail containing a set of questions on use of projector, learning habits of students, etc was sent to him.

E-mail response of school science teacher Seely (at present Prof. at Chicago University)-

I shall try to answer your questions as best as I can. I can't remember exactly how films were used in classroom instruction at BZS, but I can try to give you some information-

a. The films and the projector were donated by the Ford Foundation as far as I recall.

b. Films were screened very infrequently.

c. When we did a film show, I believe it was coordinated with the subject that was being taught at the time.

d. There was not much discussion afterwards, but some attempt was made to answer questions.

e. Since the material was in English, understanding by the students was limited.

f. I think films are useful in classroom instruction.

g. I hope that more of them are made use of now than when I was at BZS.

TCD. PA.5-

Though information gathered from only one pilot school (Barisal Zilla School, BZS) out of 20 such functioning at that time gives 5% credibility to the above data, it can be assumed that as a good number of the science teachers of 1960s who taught with projectors (bulletin 1959-69 of EEC has the list) were expatriates the 'showing of films' were materialized, but again in 20(+1) top class urban schools only.

The science students were on the average benefitted and most probably a good portion of them grew interest in science subjects. The science teacher of BZS in his opinion suggested continuing film show in classroom.

Here lies the dilemma of 'innovative use of ICT' in developing nations- the users' opinion is divided between classical use of tested technology and testing the new & innovative ways.

PA.6-

Theme: Task of spreading the Audio-Visual Facility beyond 20 Pilot Schools (PP, 1964).

SCD. & TCD.PA.6-

The following policy anomaly was traced out by the present researcher-

The objective of the revised project AVEC was that it will also assist 100 schools to be developed with respect to Audio-Visual aids as a pilot scheme, but it was not taken care

of. And- the benefit of "teaching through films" was not received by any other school students beyond those of the 21 pilot schools (PP, 1964 –xi).

PA.7-

Theme: Realisation of the Recommendation -Establishing Film Libraries and Distribution Centers at Central Locations to Distribute Films for Use in Local Community (of 1959).

SCD.PA.7-

A printed write-up of NIER dated 20 December, 1979 says-

> At present there is only one 16mm. Education Film Library at AVEC, Dacca. For this reason the whole of Bangladesh is not getting facility of the educational film. Each and every school in Bangladesh can get the benefit of educational film if we can set district level film library.

TCD. PA. 7-

The libraries were not set up in any part of the country other than Dacca.

PA.8-

Theme: Innovative Use of Mobile Vans of AVEC, SBP, BIDE in Rural Areas.

SCD.PA.8-

1. The 1959 Report of the Commission on National Education said –
   to equip the centres with mobile vans, projectors, generators, etc. for the showing of films in rural areas. Distribution and use of films, particularly in rural areas should be ascertained.

TCD. PA. 8-

The next step to putting emphasis on training in production was supposed to be taking care of the delivery side of distribution and use of films, particularly in rural areas. But this side was neglected.

PA.9-

Theme: Show of Educational Programmes with School Broadcast-Audio-Visual Van.

SCD.PA.9-

Letter of the Director, Public Instruction (27.12.1980) says-

Tour programme is granted to …, the audio-Visual Education Officer to make an official tour to record and to show educational programmes in Bheramara area of Kushtia district with the "school broadcast-audio-visual van" from16.08.80-30.08.80;

TCD. PA. 9-

Tours were conducted by the officials of the project SBP but there is no evidence that this tour recorded any educational programme. The absence of any monitoring & evaluation unit left the identified work un-done.

PA.10-

Theme: Procurement of Audio-Visual Equipments for BIDE.

SCD.PA.10-

TAPP for procurement of Audio-Visual Equipment for BIDE, March, 1987-

> The mobile vans which were received under the grant were not supplied with video production equipment and hence proper use of these vans was hampered. It was not possible to produce sufficient video educational programmes for want to video equipment.

TCD. PA. 10-

The mobile vans which were received under the grant were not supplied with video production equipment and hence proper use of these vans was hampered. It was not possible to produce sufficient video educational programmes for want to video equipment.

PA.11-

Theme: Proper Utilization of the Video Display Units of the Mobile Vans.

SCD.PA.11-

1. The Evaluation Committee of the Planning Commission (1983) says-

   > For better utilization of the video display units of the mobile vans, the project should have facilities for production of video tapes for training purpose. For this, minimal facility should be provided. The procurement of these video equipment was to facilitate the production of at least 25 educational video programmes per year to strengthen the on-going activities of BIDE.

TCD. PA. 11-

According to the above Report, the mobile vans which were fitted with portable generators, VCR, monitor for display, film screens and public address system could not

be properly utilized because of extremely short supply of appropriate films and video materials.

PA. 12-

Theme: Show of Films in Schools all Over the Country.

SCD.PA.12-

The bi-monthly newsletter of BEd students "Durshikshon", October 1987-

> Schools having both electricity connection and wide road access can profit from this type of show. At the moment it is limited to Dacca metropolitan city and its surroundings. Arrangement for other areas will be taken later. A number of schools of an area need to apply collaboratively.

TCD. PA. 12-

Schools having both electricity connection and wide road access profited from this type of show.

PA.13-

Theme: Production and Show of Video Programmes in Mobile Vans.

SCD&TCD on PA. 13-

The mobile units (of SBP) were fitted with video-cassette recorder and monitor but no production equipment was provided. Worldview International Foundation loaned production equipment to the SBP for the production of educational video programs.

PA.14-

Theme: Realisation of the part of the Supplementary Scheme, 1963 of AVEC on Use of Vans in Four Divisions of this part of the country known as East Pakistan in 1960s.

SCD.PA.14-

Three Divisional Audio-Visual Units were to be established at the Divisional Headquarters of Rajshahi, Khulna and Chittagong. The three divisional units are expected to be established near the respective divisional public libraries or deputy Director's office.

TCD.PA.14-

The above proposal was not materialized and the following was cited as reason in BIDE Report 1986- Mobile unit services were provided to a selected number of educational institutions for orientation of teachers with new curricula.

The performance of BIDE in respect of this provision has not been quite satisfactory, because of obvious reasons such as difficult communication system and inaccessibility due to poor road linkup. (p.10)

As the activity was put in the project proforma in 1963, one can definitely assume that road condition or link-up was given due thought before taking up such a plan. If it was considered feasible in 1963 then there shouldn't be a comment like "poor road linkup" in 1986.

Again a letter of Director of Public Instruction shows that van was taken to Kushtia district to show films to school student of that district in1982(Ref. PA7).

PA. 15-

Theme: The Grant Assistance of Thirty Nine Million Yen in 1987 for Microteaching.

SCD.PA.15-

It was for procurement of audio-visual equipment for the Bangladesh Institute of Distance Education under the Cultural Grant Assistance programme of Japan (Letter, 1987). The films and videos were to be prepared locally but the following activity was not materialized in the end-

> The procurement of these video equipments was to facilitate the production of at least 25 educational video programme per year to strengthen the on-going activities of BIDE.

TCD. PA. 15 –

Only 06 video lessons were recorded by BIDE on microteaching though the programme was titled 'improving classroom teaching by microteaching'.

PA.16-

Theme: Failure of the Design Stage to activate a Collaborative Network directed by a Policy.

SCD.PA.16-

1. Proforma for Development Project of AVEC; 11.(f)-

"For more complicated part of work Film Development Corporation will be referred."

iv- Production of educational films- The staff and equipments are planned in such a way that initial, preliminary works in these fields may be tackled. For more complicated part of work Film Development Corporation (FDC) will be referred.

TCD. PA.16-

No data evidence of the collaboration of AVEC with FDC was found in any document.

An FGD, as part of this research work held on 21.09.07 collected this informative data-

(One of the technical officers (of SBP) mentioned that) some work related to video cassette production was transferred to FDC. But he couldn't provide any detail on it.

PA.17-

Theme: Collaboration with Dhaka Teachers' Training College.

SCD.PA.17-

A letter dated 1st July, 1967 sent by the Director of public instruction to the Principal TTC Dhaka and Audio-Visual Education Officer of AVEC-

The AVEC has to deal with development and use of audio-visual materials in schools and also with the training of teachers in this field and has to work in close collaboration with the TTC(Dhaka).Such collaboration will be of great benefit to both the institutions.

Evaluation Report of BIDE, 1986-Part III Major Findings and Recommendations:

> 36- But in the absence of an institutional linkage where such services must be a programmed activity rather than a sporadic feature, this type of activity has very limited viability. It is therefore, recommended that an effective institutionalized co-operation and collaboration be established between BIDE and these institutions (TTCs).

TCD. PA.17-

With all the inactivity related to "collaboration", it is seen that policy implementers were not interested in the construction of any collaborative component. There is still frequent mention to the point that collaborative efforts should be enhanced. But the "enhancement" never occurs in collaboration part of any project.

PA.18 –

Theme: Time bound -use of 700 million Yen grant-in-aid of Japanese Government.

SCD.PA.18-

SBP Evaluation Report, 1983 provides information about the following events-

In early 1978, the Japanese Government offered an amount of 700 million yen as grant to the government of Bangladesh to develop School Broadcasting System in Bangladesh. After this offer a part of valuable time was wasted which then created the following disoriented events-

a. In order to save the grant-in-aid from being lapsed, the equipment list was hurriedly prepared by a Japanese Government Mission after a short survey....
b. *A* tender is floated by the Supply and Inspectorate Directorate of Bangladesh on 19.12.78.
c. The Ministry of Education entrusted the principal, TTC, Dhaka to prepare a scheme, but before its approval by the NEC the equipments arrived at Chittagong in July 1979; the equipments started to reach Dhaka in the beginning of 1980.

d. The scheme of SCB was first prepared in November, 1978 and finally approved in November, 1980.

e. The project director was appointed in December, 1980.

The same Report on the nature of equipments says- The equipments are sophisticated and complicated. Installation and maintenance services of the sets throughout the country are difficult. In Bangladesh environment of today such costly and elaborate electrical equipments can't be extended to all schools.

TCD. PA.18-

'Hurriedly' taken decisions ("in order to save the grant-in-aid from being lapsed") must be diligently put to design-delivery-evaluation stages by timely and well-thought design decisions to bring benefit to the ultimate target group- students. In the above case two years were lost (early 1978-December 1980) in between the date of offer and appointment of project director.

The SBP Evaluation Report, 1983 on the nature of equipments says- The equipments are sophisticated and complicated. Installation and maintenance services of the sets throughout the country are difficult. In Bangladesh environment of today such costly and elaborate electrical equipments can't be extended to all schools.

PA.19-

Theme: Running of an Institute on Executive Order.

SCD.PA.19-

A sum of Tk.3.00 crore is earmarked for educational technology during the Second Five Year Plan. If experimentation in educational Radio and television programme is successful more allocation will be provided by adjustment from the sectors directly benefited from the programmes. Besides, Ministries of Information and Local Government will also make provision for the purpose (The SFYP, part 16.95).

TCD. PA.19-

This scope of getting more allocation mentioned in the SFYP was perhaps very motivating as it is seen that the approval given to BIDE to start distance mode BEd by taking the approval of the then President was based on it: We request DG S&HE to release an amount of Tk twenty lac in favour of Director BIDE. Director BIDE may now take all steps to start the course w.e.f. 1.7.85.

The signature of country's the then president bears the date as 19/4/85 (Figure: PA.19).

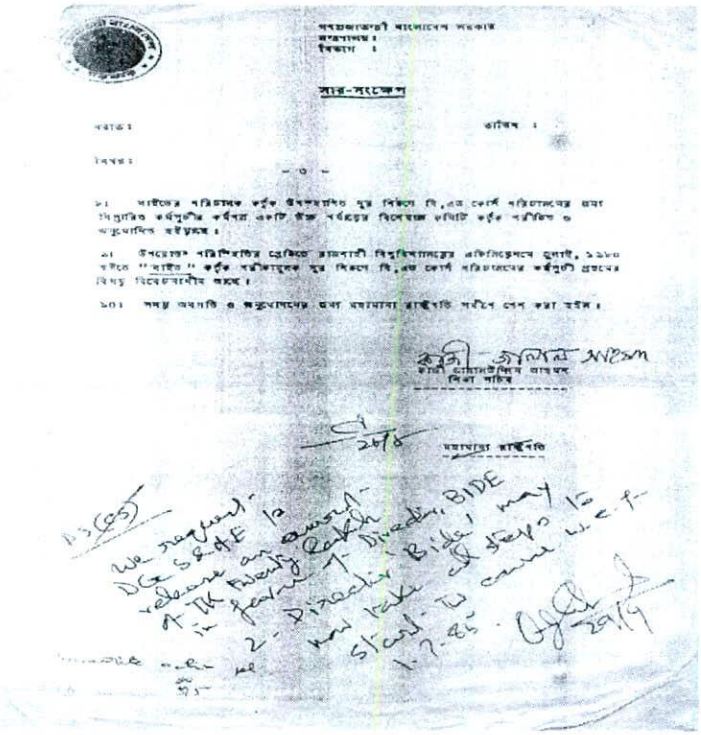


Figure: PA.19- Executive order of the President for the introduction of BEd by distance mode through BIDE: point no.2 written in English-"Director BIDE may now take all steps to start the course w.e.f 29.9".

PA.20-

Theme: Legal Footing of Distance Education.

SCD.PA.20-

Distance Education in Asia and the Pacific for Unesco (1993)- The Bangladesh paper evaluates the issue of "executive order" in starting an education programme thus:

a. The BEd distance education programme was introduced with the approval of the president of the country in June 1985. No law was passed or government executive order issued to give distance education a legal footing.
b. Even during its life time of three years the key planners and the top executives did not support the programme and move for a law or an executive government order.
c. One criticism is that the advocates of distance education were a little impatient to introduce the programme and thus overlooked this vital requirement to the detriment of the programme.

TCD. PA.20-

From the formation of SBP to the introduction of distance mode BEd – all were perceived by executive orders. AVEC is an exception as it was under the Education Directorate of East Pakistan Government.

Only the merger of BIDE with BOU was done by an Act of Parliament.

PA.21-

Theme: "Direct Transmission from Gazipur Campus to BTV and Radio Bangladesh".

SCD.PA.21-

1. BOU-Media Centre: Chronology of events on Media Centre Draft Tender Document dated 23.10.94- On provision for microwave link, tower and transmission room for telecasting BOU programmes directly from Gazipur Campus through BTV and Radio Transmitters (Rec.d.)-.
2. Project Performance Audit Report On The BOU Project, ADB, October 2002-

BOU should try to increase the utilization of its media center by exploring possibilities to broadcast its programs directly from the media center, rather than sharing the existing radio and television channels.

3. The researcher tried to talk to a good number of related personnel, but no one was willing to divulge any further information on why it got stuck up.

TCD. PA.21-

There is no official explanation available on non-compliance of the objective of direct transmission of radio, TV lessons from Gazipur Campus to BTV and Radio Bangladesh.

PA.22-

Theme: Realisation of a related 'Agenda' of Second Five Year Plan (1980-85)'.

SCD.PA.22-

> Section 16.25-(viii) Mass media will be used to overcome shortage of good teachers, books and equipment.
>
> Section 16.26- Financial Allocation-Educational Technology- (Financial allocation- Tk. 3.00 crore).
>
> Section 16.92- In view of introduction of new curricula, application of educational technology is urgently needed for improving the quality of education in general through distance teaching and teacher education in particular through microteaching and interaction analysis.(page XVI-36).

Reading and re-reading all the concerned documents the researcher became convinced that most probably a financial allocation of Taka three crore (Educational Technology: Table 16.3, page XVI-14) to the recommendation stimulated the planners to submit the project proposal hurriedly in the beginning of 1981. The relevant portion of the financial allocation is quoted here for clarity of the situation.

16.95- A sum of Tk. 3.00 crore is earmarked for educational technology during the Second Five Year Plan-

a. If experimentation in Educational Radio and Television Programmes is successful more allocation will be provided by adjustment from the sectors directly benefitted from the programmes.
b. A sizeable allocation is provided under Technical Education Sub-sector for production of Educational equipment.
c. Besides, Ministries of Information and Local Government will also make provision for the purpose.

TCD. PA.22-

The "selectively coded data" presented above on the PIs (policy implementation) and PAs (policy anomaly) show that the continuity of effort and the process in most of the time lacked vision of an experienced designer. Policies were often modified, re-modified but in the end the ultimate beneficiaries remained short of being served by 'innovative uses of ICT'. And the overall evaluation is that – there is lack of institutional capacity to translate good 'innovative uses of ICT' policies from paper to real initiatives at the ground level in distance education field of teacher education programme BEd.

4.2.1.2- 'Creation of Learner Space and Learning Environment (LS&LE) on Innovative Uses of ICT' Unit-

4.2.1.2a: Qualitative Data Set on (QLD) LS & LE

4.2.1.2b: Picture Data Set on (PD) LS & LE

In this Unit qualitative and picture data on reflection of 'innovative uses of ICT in distance teacher education' are presented under the respective headings of (QLD) LS&LE and (PD) LS & LE.

4.2.1.2a: Qualitative Data Set on QLD LS & LEs

QLD.LS&LE1-

Theme: Use of ID in Radio Lessons ("School Broadcast") of SBP & NIEMT.

SCD. QLD. LS&LE.1-

1. Trace of some ID suggestions were found in the teachers' guide of ACCS (Audio Control Console Sets) like-

To increase the quality of teaching-learning in the education field the ACCS can be used in different ways:

a. To teach by preparing a sample lesson recording any subject matter,
b. To enhance the skill of written answers of set questions with the help of the previously broadcast lesson,
c. To increase the skill of dictation by playing the recorded lesson,
d. To increase the listening skill of students by playing the recorded lesson.

2. Evaluation Report, September 1986 provides the following information-

a. Many schools have already shown a great deal of interest in these types of programmes. They think that even ordinary students may be benefited by using these programmes.
b. Although the school broadcasting are regularly done and are of reasonable quality there is no evidence that the students are really benefited by this programme.
c. There are two reasons to come to this conclusion:

c1. The existing class routine and the timing of the radio programme do not coincide which means that the students are not able to listen to the programme relating to particular school subject in the classroom when the programme is done.

c2. There is no evidence that the radio programmes are recorded by the teachers and played back in the class room to aid/supplement his own teaching.

d. It is recommended that serious efforts are mounted to make the console-based broadcasting programme a meaningful exercise. Otherwise most of the inputs provided may prove to have been wasted.

TCD. QLD. LS&LE.1-

If the above findings are taken as positive then it is not proper to comment on the basis of a survey of 16 schools (out of 1061) that –"ACCS didn't make any difference in teaching".

The air timing for radio broadcasts were always within school hours till 1970s but at present it is at odd hours like 5:10pm, which one radio official termed as "*play-time*". This point that radio lessons are broadcast at a time when the students can't listen to it is a proof that ID part is still not taken seriously in radio lesson preparation.

Going through the Evaluation Report, September 1986 the researcher summed up that the recommendation "the A CCS were not utilized properly" were to be more specific where they note that-"Serious efforts are mounted to make the console–based broadcasting programme a meaningful exercise". It is not a proper guideline while taking corrective measure in the second phase of ID works. This sort of general comment in the evaluation report is most probably due to non-serous position of any instructional designer in the evaluation team as SBP unit comprised of one teacher-educator and three administrators only.

Students' self-eagerness to have a proper learning environment and learner space surfaced this way: during discussion with the students it was noted that they sometimes found it interesting and they came to know something new which was useful for them. But they want more detail, elaborate and spontaneous lectures by the speakers (Appendix M9-Evaluation Report of SBP, 1983).

QLD.LS&LE.2-

Theme: State of LS&LE in the Design-Delivery Stages as demonstrated through 'Teaching through Projected Films' (AVEC period).

SCD. QLD. LS&LE.2-

Evaluation report of AVEC says- the existing class routine and the timing of the radio programme do not coincide, which means that the students are not able to listen to the programme relating to particular school subject in the classroom when the programme is broadcast.

The recommendation No 11.9 of the 1983 report –'There should be more dialogue between the schools and the project' was very carefully omitted in the n-ieme modified proposal of the BIDE submitted as per requirement of the NEC.

Two catalogues of year 1958 and 1961 were found. They were composed of imported films and all in English language.

Science teacher of Barisal Zilla School (BZS,1 out of 20 Pilot school included in the project) was interviewed for this research by email questionnaire. He said though he doesn't remember the details he thinks the students were benefitted through showing of films.

TCD. QLD. LS&LE.2-

Second point of this theme shows that there was lack of coordination between the project people, radio authority and the school administrators.

Third point of this theme shows that at that time the administrators preparing the proposal-revised proposal gave little thought to the importance of this dialogue- 'creation of LS&LE'.

QLD. LS&LE.3-

Theme: Broadcast of Radio Lessons.

SCD.QLD. LS&LE.3-

Period 1956-66-The main activity of AVEC was to receive and distribute the radio sets. From 1960s general educative programmes were broadcast from the Radio stations. The programmes were prepared in consultation with the teachers and were trimmed to the requirements of the curriculum. The schedules were circulated to schools in advance to facilitate their listening in coordination with the school's time-tables.

Bulletin of School Broadcast 1966-1971-

Broadcast started on 1 December 1966 by the Dacca station of Radio Pakistan.

A programme brochure titled "School Broadcast" was published jointly by Radio Pakistan, Dacca and AVEC.

Programme (of 1970) used to be broadcast five days a week excepting Friday and Sunday. The duration of Saturday's programme was 20 minutes and the duration of other days was 30 minutes.

Findings reflecting Recommendation of March 1970 says- There was no lesson based on mathematics (Brochure -School Broadcast, 1969). This was in contradiction to the Recommendation - For a general improvement of the teaching of science, math and technical subjects the mass communication media, particularly, the television and radio should be effectively utilized.

Bangladesh Period: 1971-June1992-A reformed version of "Shiksharthir Ashar" started on 1st January 1981. The main objective of this learners' session conducted by "School Broadcasting Programme "(SBP) project (being a project of the Planning Commission and recipient of 1061(1100) audio control console sets from Japanese Government) was - improving school education through broadcasting curriculum based education programmes from Radio Bangladesh.

One Focus Group Discussion with technical officers and office staff of SBP held on 23.05.07 revealed that peer group/ teacher-student discussion was at times encouraged by the teachers after the radio lesson.

From 1992 onward- Since 1992 Shiksharthir Ashar (School Broadcast) is being academically controlled by Open School of BOU. Its School Committee makes selection of teacher-presenters, topics, and the Dean issues appointment letters to lesson writers and presenters after a number of meetings with concerned personnel of Bangladesh Betar. The appointed teacher then prepares the manuscript and gets it recorded at the recording station of Bangladesh Betar. Programme brochures are printed for the Bangladesh Betar only.

Expert opinion on Learning Benefit from Radio Lessons-

a. Reddi (2005) says-
   Each discipline has brought its own special tools to the scholarship (communication media), little recognizing that educational media is itself a new emerging discipline with its own pedagogy and grammar and therefore requiring a different perspective and different tools.

b. Ninan (2005) wrote about one A-V programme titled SIET(State Institute of Educational Technology)-
   In spite of all good intensions, programmes are more often than not incompetently made, the teachers who show this to the children are completely clueless even about basic methods of teaching, ..yet the children have benefited academically.

TCD.QLD. LS&LE.3-

In the past the radio lesson was broadcast during school time but the present time for broadcast is totally disrespectful of school time and no guidance is provided to students; hence it is more of a general enrichment lesson. It is known that in spite all the limitations children get academic benefit out of radio lessons.

QLD. LS&LE.4-

Theme: State of ID for Creation of LS&LE of AVEC and SBP.

SCD.QLD. LS&LE.4-

AVEC-

A good number of expatriate Audio-Visual experts like Mr. John Wales of Unesco, Dr. Ritter, FulBright Scholar, Mr. Guth and Mr. Scheerer, Mr.& Mrs. Chitwarrent, etc helped in the preparation of the project proposal. Among the main activities the following one needed most of the ID help- Production of educational films and preparation of general catalogue of Audio-Visual Aids.

Proforma for Development Project of AVEC 11(f)-

'Teaching through films' was to be one of the primary activities of the Audio-Visual Education Centre (AVEC).

The original scheme was said to be already approved by the Second Five Year Plan of Pakistan.

SBP-

Proper ID for radio broadcast with ACCS was to take care of the following steps:

To increase the quality of teaching-learning in the education field the ACCS can be used in the following ways-

a. To teach by preparing a sample lesson recording any subject matter,
b. To enhance the skill of written answers of set questions with the help of the previously broadcast lesson,
c. To increase the skill of dictation by playing the recorded lesson,
d. To increase the listening skill of students by playing the recorded lesson.

An ID component in Interim Education Commission Report,1979 is such-

An identified school in each mohakuma for those students who will need explanation on radio television lessons.

1980-1987-

A British Team was invited to visit Bangladesh in November 1980 to discuss the feasibility of introducing distance education system in Bangladesh.

It is revealed in the Evaluation Report of SBP (1983) that the project director un-approved BIDE actually assisted the British Expert "to explore the possibility of introducing Distance Learning in the country"- hence till any other evidence is found it can be safely stated that the first-hand knowledge gathered through previous service motivated the project director to start BIDE's function in two months time. But the functioning of BIDE was started with a few administrator and technical officers who

didn't have any time to really think of ID as they were motive driven to be the founder of distance education in Bangladesh.

TCD.QLD. LS&LE.4-

AVEC-

AVEC couldn't prepare any single film in Bangla for school students. As there were expatriate ID specialists in the project proposal formulation stage, absence of any ID specialist in design-delivery stages then should have resulted in the incompleteness of the project objectives. Unfortunately, "teaching through films" being one of the primary activity of the Audio-Visual Education Centre (AVEC) was not brought to total satisfactory level.

SBP-

An identified school in each mohakuma for those students who will need explanation on radio television lessons- this very important recommendation related to the possibility of creation of learner space and learning environment was never taken care of. If the recommendation was realised then there would be a chance for teachers present in those schools to explore answers to the following important questions-

a. How to motivate and keep the motivation of (learners) high; how to avoid (student) frustrations?
b. How to establish and maintain interaction among students, teacher/students and user/system?
c. How to manage a learning community atmosphere?
d. How to moderate discussions?

QLD. LS&LE.5-

Theme: Functioning of Audio-Visually Equipped Schools as Field Training Grounds for Teachers.

SCD.QLD. LS&LE.5-

Proforma for Development Project of AVEC;11.(f):

iii) Development of schools-

a. During the Plan period 1962-65, 60 primary schools, 20 pilot schools and 20 secondary schools will be fully equipped with audio-visual aids to education to act as prototype of schools actively using audio-visual aids techniques in day to day teaching.
b. They will demonstrate all audio-visual aids equipments in normal classrooms use, in various subjects and at different age levels and will be regarded as field training grounds for teachers and for the students in training colleges of the respective localities."

No report mentioned that this portion was implemented.

TCD.QLD. LS&LE.5-

Audio-visually equipped schools weren't regarded as field training grounds for teachers. In other words the teacher training component was left non-treated.

QLD. LS&LE.6-

Theme: The Design Stage of the Policy 'School Broadcasting System in Bangladesh' of SBP.

SCD.QLD. LS&LE.6-

Different versions of objectives in different documents are found which makes the objectives of the project confusing.

1. Document A:

An amount of 700 million Yen as a grant to the Government of Bangladesh is given to develop School Broadcasting System in Bangladesh in early 1978. In November 1980 the Project gets approval.

2. Document B:

During 1979-80, a pilot project entitled 'School Broadcasting Programme (SBP)' costing Taka 630.86 lakh was taken up with a Japanese grant of 700 million Yen-for improving quality of school education through broadcasting curricular based education programme through Radio Bangladesh. About 1100 Audio Control Console Sets and 10 mobile audiovisual vans were procured with the Japanese grant to implement the project. The audio control sets were distributed to secondary schools having electricity network for broadcasting lessons in the classrooms.

3. An autonomous type Institute of Educational Radio and Television should be set under the Ministry of Education (1979) with the objective to produce educational programmes for radio, television.

TCD.QLD. LS&LE.6-

Document A says that the grant is to develop school broadcasting system while document B says the objective is to- improve quality of school education through broadcasting. Objective of document B is a lot vast than the objective stated in document A.

Reading and re-reading all the concerned documents the researcher became convinced that most probably a financial allocation of Taka three crore (Educational Technology: Table 16.3, page XVI-14) to the recommendation stimulated the designers to submit the project proposal hurriedly in the beginning of 1981.

QLD. LS&LE.7-

Theme: Incorporating LS&LE in the Radio Broadcast Lessons.

SCD.QLD. LS&LE.7-

An autonomous type Institute of Educational Radio and Television should be set under the Ministry of Education. Its objective was to produce educational programmes for radio, television (Rec. 1979.

To materialize the 16.25 (viii) of SFYP (p.27) there were such suggestions in the teachers' guide of ACCS-

a. To increase the quality of teaching-learning in the education field the ACCS can be used in the following ways:
b. To teach by preparing a sample lesson recording any subject matter,
c. To enhance the skill of writing answers of set questions with the help of the previous lesson,
d. To increase the skill of dictation by playing the recorded lesson,
e. To increase the listening skill of students by playing the recorded lesson.

Evaluation Report of BIDE, September 1986- Although the school broadcasting are regularly done and are of reasonable quality there is no evidence that the students are really benefited by this programme. There are two reasons to come to this conclusion:

> First: the existing class routine and the timing of the radio programme doesn't coincide which means that the students are not able to listen to the programme relating to particular school subject in the classroom when the programme is done.
>
> Second: there is no evidence that these programmes are recorded by the teachers and played back in the class room to aid/supplement her/his own teaching. It is recommended that serious efforts are mounted to make the console–based broadcasting programme a meaningful exercise. Otherwise most of the inputs provided may prove to have been wasted.

TCD.QLD. LS&LE.7-

The following finding in the Evaluation Report -

> the existing class routine and the timing of the radio programme do not coincide which means that the students are not able to listen to the programme relating to particular school subject in the classroom when the programme is done,

means there is lack of coordination between the project people, radio authority and the school administrators.

The recommendation No. 11.9 of the 1983 report says-

> There should be more dialogue between the schools and the project.

But this recommendation was very carefully omitted in the n-ieme modified version of the proposal of the BIDE submitted as per requirement of the NEC. This shows that at that time the administrators preparing the proposal-revised proposal gave little thought to the importance of this theme- 'LS&LE'.

LS&LE(QLD).8-

Theme: ICT Facilities provided to Rural Students.

SCD.QLD. LS&LE.8-

Expansion of Audio-Visual Centre, 1962-

> Since most of the primary schools are not electrified and also considering the economic position, it is planned to equip the primary schools with non-projected Audio-Visual aids only such as Flannel graph, charts, models, posters, diorama.

All these school will get the facility of Audio-Visual Van of the respective Divisional Units.

The Chapter XVI of the Second Five Year Plan, 1980-85 says-

> Radio sets, recording sets and other accessories will be supplied secondary schools having access to electricity under a pilot project. Efforts will be made to provide transistor sets to primary and secondary schools in the rural areas.

BOU Project Proposal, 1992-

> Through the use of radio and television broadcasts and supply of self instructional materials, through postal service, BOU courses will reach every community, even in the most remote rural areas.

Comparative data from another under-developed country: Nicaragua-

> In a project for teaching mathematics by radio to school children in primary grades in Nicaragua, students who were taught through radio lessons achieved significantly higher scores in the final evaluation than those taught through regular, face-to-face, classroom instruction. Rural students, tested against rural control groups, benefited more than urban students tested against urban control groups (Gaida & Searle, 1980). The project evaluators hypothesized that radio lessons were particularly

effective in raising the level of knowledge of those who knew least, which in this case were the rural students.

TCD.QLD. LS&LE.8-

Rural schools and schools without electric facility , both type were to get some special facility, one of them being the 'facility of Audio-Visual Van' but it was never materialised, keeping the rural students deprived.

The fact that at present it is possible to extend Radio-TV transmission, even recording facility to rural area was demonstrated by the present researcher when she could record a TV lesson on evaluation of students' learning in a remote village of Pirojpur district. A picture (Figure TCD.QLD. LS&LE.8) is tagged below.

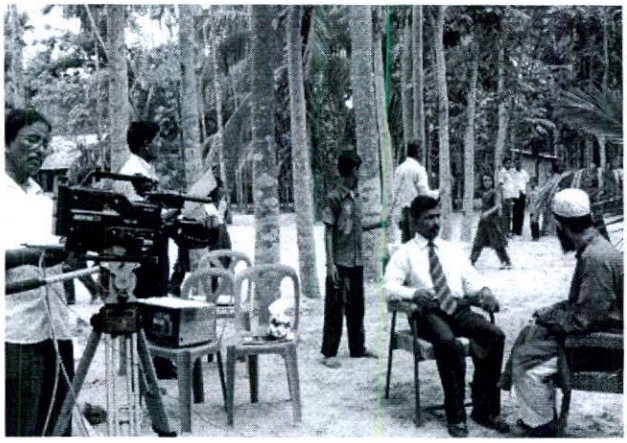


Figure: TCD.QLD. LS&LE.8- TV recording of a lesson in a remote rural school to provide "real learning environment" in the TV lesson.

QLD. LS&LE.9-

Theme: Preparedness of Technical Staff to handle ID.

SCD.QLD. LS&LE.9

Initial strength of BIDE technical staff-

At the time of the merger of AVEC and SBP there were one studio engineer, one evaluation officer, two programme specialists, two programme officers, one technical assistant in SBP and one audio-visual education officer, one asst. audio-visual education officer, one audio visual artist and one script writer at AVEC. Some of them were given re-designated posts to fit the activities of NIEMT.

Information on the type of training they received-

> 'It is important that the technical officers of the Institute be given training on the mechanical and technical sides of the audio control console sets.' So they participated in special course held at NIEMT, on the repair and modification of audio control console sets, conducted by two Japanese experts from17 January to 6 February.

Two of the technical officers attended a training course on 'Digital Technique and Microprocessing' organized by National Broadcasting Academy.

In the 1961 Unesco Report titled Mass media in the developing countries suggestion was:

> the training of professional and technical personnel is a key element in the effective development of films. Governments of the underdeveloped countries might accordingly examine the possibility of establishing or assisting the establishment of national or regional training centres (page 42).

TCD.QLD. LS&LE.9-

Nothing was found to substantiate the idea that the technical officers were prepared to work with IDs for recording-editing radio-TV lessons of the design-delivery stages on 'innovative uses of ICT'.

QLD. LS&LE.10-

Theme: Quality of Attention on Creation of LS&LE.

SCD.QLD. LS&LE.10-

Proforma for Development Project of AVEC (PDPA); 11(f) says- "Teaching through films was one of the primary function of the Audio-Visual Education Centre (AVEC)". In the approved scheme for this centre the planners pointed that its provision for the purpose was quite inadequate.

Curriculum of the specialized training course offered by Unesco titled- Information and Communication Technologies in Distance Education (2002) says in its preface-

> This course has been prepared in response to the many major changes that are coming in the developing world in the way education and training programs are produced and delivered, how educational institutions are organized, and how educational resources are distributed.

TCD.QLD. LS&LE.10-

Going through the concerned document (PDPA) cited above it was found out that -

planners and policy makers tried to change the original plan without seemingly conducting any research on the learners' capacity and preparedness. It can safely be concluded that proper attention was not paid to the creation of LS&LE.

QLD. LS&LE.11-

Theme: Equipments and their Use to Create LS&LE.

SCD.QLD. LS&LE.11

A concrete piece of information regarding the facilities for science teaching was collected from a document that was created with the help of a questionnaire circulated among the 145 science teachers who participated in science courses at the Education Extension Centre (EEC), Dacca during the years 1967-68. The related question and the answer received are presented here-

Q10- Indicate which of the following are available in your school?

A10- Radio..... 67%

Projector.... 11%

Charts & wall pictures for science teaching... 50%

1981-Project Proposal of BIDE makes a comment- These console sets are very costly and sophisticated electronic equipments.

Evaluation Report of the School Broadcasting Programme,1983- as the Committee conducted a study on 16 schools of Dhaka, Tangail and Sylhet districts only, out of a total of 1060 schools its findings are itself not that representative and objective. One of the related comment is -

> Schools tend to prefer equipment with less sophistication, electric failure disturb programme, the equipment is being rarely used for the listening to SBP programme but used mainly for controlling classes/making special announcements.

Impression of students regarding this programme:

> During discussion with the students it was noted that they sometimes found it interesting and they came to know something new which was useful for them. But they want more detail, elaborate and spontaneous lectures by the speakers.

Evaluation Report, 1986 –

> It is recommended that serious efforts are mounted to make the console – based broadcasting programme a meaningful exercise. Otherwise most of the inputs provided may prove to have been wasted.

Direction given to a lonely learner in the 1987 Student Guide of BEd prepared by BIDE –

> If you don't have any tape recorder then you can use the audio console control set of your nearest school.

TCD.QLD. LS&LE.11-

The statistical data of the 'Bulletin' report says that radio sets were available in comparatively more schools. Though the portion of projector is less than that of radio sets the statistic doesn't say anything about their use and about their benefit. These points most probably weren't of much importance to the report makers.

QLD. LS&LE.12-

Theme: 'LS' in the Radio Programmes of Bangladesh Period.

SCD.QLD. LS&LE.12-

Comment in the NIER report of 1979, page13-

> Although the school broadcasts are regularly done and are of reasonable quality there is no evidence that the students are really benefited by this programme. There are two reasons to come to this conclusion.
>
> First, the existing class routine and the timing of the radio programme do not coincide which means that the students are not able to listen to the programme relating to particular school subject in the class room when the broadcast in done.
>
> Second, there is no evidence that these programmes are recorded by the teachers and played back in the class room to aid/supplement his own teaching.

Recommendation- It is recommended that serious efforts are mounted to make the console –based broadcasting programme a meaningful exercise. Otherwise most of the inputs provided may prove to have been wasted.

SBP-
Suggestions put forward in the Evaluation Report of BIDE (1986)-

To increase the quality of teaching-learning in the education field- the ACCS can be used in the following ways-

a. To teach by preparing a sample lesson recording any subject matter,
b. To enhance the skill of writing answers of set questions with the help of the previous lesson,
c. To increase the skill of dictation by playing the recorded lesson,
d. To increase the listening skill of students by playing the recorded lesson.

It seems to be all too general suggestions indicating the absence of ID expert in the Evaluation Committee.

NIEMT, 1983 Report-

Many schools have already shown a great deal of interest in these types of programmes. They think that even ordinary students may be benefited by using these programmes.

Although the school broadcasting are regularly done and are of reasonable quality there is no evidence that the students are really benefited by this programme. There are two reasons to come to this conclusion:

The existing class routine and the timing of the radio programme do not coincide which means that the students are not able to listen to the programme relating to particular school subject in the classroom when the programme is done.

There is no evidence that the radio programmes are recorded by the teachers and played back in the class room to aid/supplement his own teaching.

Appendix M9, Evaluation Report of SBP, 1983-

Students' self-eagerness to have a proper LS&LE:

During discussion with the students it was noted that they sometimes found it interesting and they came to know something new which was useful for them. But they want more detail, elaborate and spontaneous lectures by the speakers.

The air timing for radio broadcasts were well within school hours till 1970s but at present it is at odd hours like 5:10pm, which one radio official termed as "play- time".

TCD.QLD. LS&LE.12-

The issue raised in the NIER report is a very important one, the collaboration between school administrative authority and the AVEC designers is very important to make a workable class routine. The AVEC authority completed the task by keeping a request to the school authority in the programme bulletin. Even after the publication of NIER report the situation doesn't seem to have improved. It is same with the radio programme controlled by Open School of BOU at present.

It seems that students were always eager to learn from different sources and technology-based lectures had some special attraction. But the hastiness of the projects never put proper importance on creation of 'LS &LE'.

Outcome of an FGD of the present research, held on 12.06.08 –

a. Virtually all the technical officers of SBP hinted that the time required to design, develop and deliver the technology-related text materials like radio-TV lessons was really too insufficient hence quality work was in many cases humanly impossible.
b. There was no instructional designer as such to help develop and deliver the courses under the Japanese grant.
c. Five out of seven technical officers felt that they had been able to foster a very strong sense of both community and partnership between themselves and the students, as well as between the students themselves, the other two officers remember after long time gap that students were not really content with the scope.
d. The students wanted teachers' explanation after the radio session but the class routine never gave them that scope.

QLD. LS&LE.13-

Theme: Strength of Radio-TV lessons.

SCD&TCD on LS&LE(QLD).13-

Distribution of Teaching Aids	Radio Programmes	TV Programmes	Training of teachers
1061 audio console sets distributed in the selected institutes in the country. 04 Educational radio broadcast schedules covering the period up to June 1983 have	A total of 919 radio programmes produced up to December 1982. 250 audio programmes of curricular topics and life oriented	41video porgrammes prepared.	More than 2000 science teachers of schools possessing audio console sets have been trained on the use and operation of the console sets.

been prepared, printed and distributed to schools and interested students, teachers and others.	education have been prepared.		Five special courses on broadcasting techniques were organised for 140 teachers up to 1982.

QLD. LS&LE.14-

Theme: Teaching of Mathematics and Science.

SCD.QLD. LS&LE.14-

1. A close observation through The Catalogue: School Broadcast, 1969 revealed that- there was no lesson based on mathematics. This was in contradiction to the recommendation of March 1970- For a general improvement of the teaching of science and technical subjects the mass communication media, particularly, the television and radio should be effectively utilized.

2. The 1980 "Shikhsharthider Ashar" finally included radio lesson on mathematics.
3. The National Secondary Education Science Development Project (NSEDP)-A letter dated 20.12.82 states about the activities of SBP-

   To introduce effectively new science education activities in non-government secondary schools.

4. Video Recording of Science Lessons for grades 9 and 10 by SSEP-

   4a. Minutes of the meeting of DG,SHE and Education Secretary on 14.5.89-

   we could , with the help of BIDE, go in for recording on videotapes 50 science lessons for grades 9 and 10 at a total cost of Tk. 50,000 which could come from the Secondary Science education Project. The tapes can be used with great advantage for supplementing classroom instruction. Project Director, Secondary Science education Project, will kindly work out the details and initiate action early in consultation with the chief Technical Adviser, SSEP.

   4b. Part of the Minutes of the meeting 25.7.89-

   a. Purchase of instruments for NSESDP-
   b. The total responsibility of production of the video cassettes lie with BIDE. But as there is no arrangement of instruments at BIDE arrangements should be made on emergency basis to buy the instruments, which could be temporarily used by BIDE also.

c. The policy guideline for the payment of all honoraria will be fixed later.

TCD.QLD. LS&LE.14-

Interview with an ex-officer of the project who is at present working at SoE, BOU revealed that not a single video on mathematics and science was produced by the project till the end.

QLD. LS&LE.15-

Theme: TV Lesson-of both School Science and BEd Teacher Training.

SCD.QLD. LS&LE.15-

1. During the initial project period of BOU the Japan government donated a number of video cassettes of NHK on school science. Two series were culturally translated and regularly broadcast on BOU air- time given by BTV.

2. Evaluation Committee Report, 1983- 11.9 (page 12)-

   The project(SBP) should now concentrate on the improvement of the quality of material for broadcast and ensure better utilization of programme at the school level both by the students and teachers.

3. TV lessons on BEd programme still lack in number if not in quality.

4. Video lessons on selected topics such as microteaching, feedback-monitoring lesson, etc, were to be produced by BIDE with existing facilities and were to be be used during summer schools at the TTC's through the equipments of BIDE(BIDE Report, 6.5)

5. Practice Teaching-

   For smooth operation of the practice teaching, suitable lessons will be given through practical demonstration and with the help of video cassettes during the first summer school to be held at the end of the second semester. Throughout the period of 3rd and 4th semesters the trainees will continue their practice teaching in their own school.(source: booklet titled- "BEd through distance Education" published by BIDE, 6.9).

TCD.QLD. LS&LE.15-

The present researcher was the main presenter of one of these NHK series, each episode was culturally transformed with participation of Bangladeshi school children (Data Base of Media Division, 1998).

No specific trace of video lessons prepared by BIDE on practice teaching could be reviewed as the modality of viewing them at BOU doesn't exist. SoE of BOU produced quite a few TV lessons on practice teaching.

QLD. LS&LE.16-

Theme: 'Second Channel' and creation of LS&LE.

SCD.QLD. LS&LE.16-

1. Project Proposal of BOU-The establishment of Second Channel at the Bangladesh Television was also not included in PCP. A second channel is a must for successful implementation of BOU programmes and objectives. Owing to shortage of fund, this could not be included in the present scheme.
2. TQI-SEP-Suggested the increased use of TV lesson for BEd with the introduction of the Second Channel.
3. Work progressed at the Ministry level to have BTV World time for BOU during 2008-09 but till end 2010 no visible result was there.

   IT Related Distance Education Scheme of the Bangladesh Open University will be expanded through the use of TV and Internet-

the implementation stage of this recommendation is yet to start.

4. Possibility of using the second channel of Radio and TV will be explored for distance teaching- remained a non-possibility.

TCD.QLD. LS&LE.16-

Second TV channel is not given to BOU but beginning 2009, BTV World Service allocated a lot of time for BOU. At present BOU is struggling hard to produce a very good number of lessons to run through the allocated time.

QLD.LS&LE.17-

Theme: LAN facility at BOU.

SCD.&TCD.QLD.LS&LE.17-

LAN facility was not installed at the 06 RRCs due to some undisclosed reason.

QLD.LS&LE.18-

Theme: Creative Role of TV Lessons.

SCD.QLD.LS&LE.18-

1. SBP record says they had 51 lessons in 1982.

2. During BOU period-In 1992-93 two of the NHK video series on teaching everyday Mathematics and Science were culturally translated and were broadcast for quite some time. Starting from 1993, BOU completed a cultural remake of the videos donated by NHK related to everyday science and mathematics and could telecast at least 40 lessons regularly that were quite popular among the mass (Hossain,1993).

3. Till 2005, BOU produced in total 60 TV lessons for its BEd programme.

4. BOU couldn't distribute any video cassette to its registered BEd students or even to the tutorial centres till 2009.

TCD.QLD.LS&LE.18-

TV lesson production is still at a very immature stage- there is no approved policy guidelines on broadcast even. Politically volatile situation often arises out of use of certain word, certain topic, certain presenter, etc.

Tutorial Services-

QLD.LS&LE.19-

Theme: Creation of 'LE' at Tutorial Centres.

SCD.QLD.LS&LE.19-

1. BIDE,1986-

On 'innovative BEd' introduced by BIDE- BIDE Guidebook for the Regional Centre (June, 1985): Summer school- in distance education students are deprived of teachers' presence. Specifically, teachers can't collect information on how students are learning neither do the students understand part of the lesson through self–learning. As a result the students frequently suffer from frustration. To redress this difficulty each year in June a nine day long summer school is designed where direct teaching is arranged.

2. A bi-monthly bulletin was sent to each student by post containing information on courses.

3. 3200 copies of audio cassettes were given to 2^{nd} batch students in 1986.

4. In May-June 1986 13 audio lessons on BEd programme were produced and 3000 copies of each were produced to distribute to 2^{nd} batch BEd students at the time of admission.

5. BOU-

5.1.1. BOU Mid- Term Review Report about the activity at tutorial centres-

a. There is no provision to think specifically about the important field of learner space and learning environment.

b. There is learner-learner and learner-tutor interaction but no learner-faculty interaction. Students don't identify with faculty and what they do remains unknown to faculty.

c. The following suggestion was put forward in the Report-
Photographs of faculty can be put into the student handbooks and tutor training manuals along with a short biography and description of what faculty member does- course s/he writes, etc.

6. BOU never provided any of its learners with newsletter though it used to broadcast news through radio, TV. There were 'academic calender' containing radio-TV broadcast timings for learners of BOU.

7. TQI-SEP 2006- On Tutorial Services-

A student's guide to effective learning at a distance be designed and developed in both print and video production. In conclusion, BOU has the willingness, commitment and capacity to deliver the new BEd program but key areas of concern will need to be seriously addressed in the near term to ensure that what is provided to the learner is of the highest caliber. Most notable of the areas needing immediate attention are in the area of learning support including tutorial services and examinations.

TCD.QLD.LS&LE.19-

The finding of SCD is a reflection of the evaluation stage and shows the absence of proper study of the stage of project proforma. BOU-TQI-SEP collaboration had specific plan but the present design-delivery stage is yet to put right kind of attention for positive outcomes.

QLD.LS&LE.20-

Theme: Creation of LS&LE at BOU Tutorial Centres in the early period of BOU.

SCD.QLD.LS&LE.20-

1.This is taken from a research paper by the present researcher.

a. In the very beginning BOU started the recruitment of tutors and selection of tutorial centres by public advertisement in the daily newspapers.

b. As regional centres of BOU took time to become established, the tutorial centres and tutors of BIDE period retained significant influence on the learners during the nineties when technological advances, which could have been utilised, were occurring rapidly worldwide. Under these circumstances 'studying at one's own pace and with self-enhanced motivation' was not an appropriate message for many learners.
c. The tutors inherited from BIDE were actually the teachers of face-to-face or traditional training colleges and they could not fully embrace the newly introduced principal points of distance education ideologies by the teachers of newly formed School of Education.
d. The old (or BIDE period) tutors were at times reluctant to embrace and practice any of the newly suggested ideas in their tutorial sessions. With time though these traditional teacher educators and trainers started to adopt some new ideas
e. Though headmasters role was highlighted in the published reports of the early BIDE period, and suggestions were made to provide tutorial centres with audio visual teaching aids nothing of the sort was done up to the end of 1999 to materialise these suggestions.
f. The faculty members failed totally to convince their distance learners as well as tutors that tutoring in distance education is different from classroom teaching sessions in a face-to-face teaching system.
g. BOU inherited a small recording studio and it obtained a time slot on the state run radio and television station. A number of audio and video programs on micro teaching, the use of teaching aids, and other relevant topics were recorded and broadcast repeatedly but the faculty failed to link the printed lessons with these broadcasts.

2. TQI-SEP suggestions-

Tutorial centres should be provided with appropriate teaching aids to assist in more activity based and participatory learning. These should include at minimum overhead projectors, white boards, television monitor and VCR/DVD players.

TCD.QLD.LS&LE.20-

In the early period of BOU all BEd tutors of SoE were to receive orientation on open and distance learning and training in their roles and responsibilities as facilitators of learning as opposed to lecturers, prior to the commencement of the new BEd.
Improved communication strategies between BOU and tutorial centres weren't implemented including regular meetings to receive feedback, exchange of information and ideas, identify problems. These meetings should include representatives from various Divisions and the SoE.

LS&LE(QLD).21-

Theme: Tutoring during TQI-SEP-BOU Project Period.

Table: LS&LE(QLD).21- A Comparative Presentation of BEd Tutoring using Two Different Techniques-

Case A- Old BEd of SoE	Case B- TQI-SEP-BOU Collaborative BEd
A1. Mr. X is a tutor of a school subject of old BEd programme at a tutorial/study centre C since 1992.	B1. Ms. Y is a tutor of a school subject of the new BEd programme being offered at a tutorial/study centre D since 2008.
A2. He underwent a short tutor training along with all tutors conducted by SoE in 1994.	B2. She got a short tutor training conducted jointly by SoE-TQI-SEP in 2008.
A3. Two separate tutor guides prepared by BOU and SoE respectively were distributed to them.	B3. One tutor guide prepared by jointly by SoE-TQI-SEP was distributed to them at the end of the first academic semester.
A4. The methodology of the training programme was quite engaging and exhaustive for the period but the tutors didn't get the extra incentive of getting involved in an all paid overseas training like that of case B.	B4. The methodology of the training programme was quite engaging for the period but the tutors got the extra incentive of getting involved in an all paid overseas training of two months duration.
A5. There was no monitoring-feedback component in the real sense once the tutors got involved in tutoring.	B5. There are actually two monitoring-feedback components put into action by both SoE and TQI-SEP by the two collaborative partners separately.
A6. This is how he conducts the twice monthly tutorial sessions- Comes directly to the classroom of the tutorial centre, usually in time; conducts the session as he wishes- interactive or lecture method. There was possibility of getting some sort of complain if the local administrator of BOU paid some surprise visit and his inaction was detected unfortunately.	B6. This is how she conducts the four times monthly tutorial sessions- Following the routine sent by the SoE comes somewhat prepared to conduct an all interactive session. She is well aware that a visiting team of TQI-SEP may be there any Friday. Though SoE team is not visible physically there is possibility of getting some complains through the centre co-ordinator if learners make complain.
A7. The course books don't elaborate the identity of the three of interaction as such but there are examples of both tutor-learner, learner-learner interaction.	B7. The course books elaborate the identity of the three of interaction with a good number of activity-based examples of the tutor-learner, learner-learner interaction.

TCD.QLD. LS&LE(QLD).21-

Though Case A may appear slightly weaker than the case B it is very hard to make a comparative measure of the fruitfulness of the three types of interactivity. There should be some instrument in place to collect reliable information.

Microteaching and Interaction Analysis

QLD.LS&LE.22-

Theme: Microteaching and Interaction Analysis.

SCD.QLD.LS&LE.22-

1. SFYP, 1980-85-
   In view of introduction of new curricula in schools, there is need for introduction of educational technology in the form of TV sets, video – tapes, cassettes, projectors and non-projected audio-visual teaching aids in order to improve the quality of education in general through application of distance teaching and teacher education in particular through microteaching and interaction analysis.

2. The Project Proforma of BIDE (1984)-
   ii) A new concept of teachers' training (like microteaching) will emerge in the teacher education programme in the country. 40 video programmes with 20 copies of each will be produced to support the teachers' training programme and mobile units.

3. BIDE-
   In 1985 BIDE engaged itself in producing a series of video lessons on microteaching numbering six, these were completed in 1986.

Table: QLD.LS&LE.22- The TV Lesson Production Result-

Production Time	Title of the Video Lesson
March 1985	Skill of stimulus variation
April 1985	Skill of introduction
May 1985	Skill of probing questioning
January 1986	Skill of reinforcement

February 1986	Skill of blackboard writing
March 1986	Skill o f closure

3a. The Project Proforma of BIDE submitted in 1986 quoted the Second Five Year Plan thus-

Mastering of usability of video cassettes of microteaching-

> In the Second Five Year Plan, on the other hand, in view of the introduction of new curricula, application of educational technology was considered urgently needed for improving the quality of education in general through distance teaching and teacher education in particular through microteaching and interaction analysis.(P.P.- BIDE, 1986).

3b. Unesco report, 1993-

> Microteaching, if practiced at all (for BIDE BEd), was no more than a make believe game. Obviously, this very important aspect of the teacher training programme was primarily neglected. If these lapses had been prevented, the distance education programme could have proved itself quite efficient and effective.

4. BOU-

4a. BOU inherited a small recording studio (though later it was found out that the BIDE studio was reformed with project BOU's money) and it obtained a time slot on the state run radio and television station. A number of radio and TV programmes on micro teaching, the use of teaching aids, and other relevant topics were recorded and broadcast repeatedly but the faculty failed to link the printed lessons with these broadcasts (Hossain,2000).

4b. In its short span of life the Microteaching Laboratory of SoE organized a number of short training for the teachers of the BOU Laboratory School situated in the Gazipur Campus. It could also have its budget approved by the central Finance Committee for three consecutive years before being stopped in the fiscal year 2009-10. It has, at present a few instruments in its possession and has a record of making three video lesson on microteaching.

In spite having a laboratory school, a full fledged media centre and approved annual budget; a microteaching laboratory at BOU remained unapproved due to lack of proper administrative knowledge on the part of faculty and couldn't add anything after 2005.

5.TQI-SEP didn't lend any technical help to resume the real work of microteaching till 2010.

TCD.QLD.LS&LE.22-

1. A telephonic interview on 03.11.10 and 04.11.10 with one retired teacher-trainer of Dhaka TTC confirmed that they got the video equipments given by BIDE to video record the sessions where trainees were to follow the technique of teach-re-view-re-teach. A few teachers got training to handle the equipments but during real life recording the result wasn't encouraging and the college abandoned the procedure. He doesn't remember if the college authority prepared any report.

2. 'Skill of stimulus variation' video produced during BIDE period as presented in Table: QLD.LS&LE.22 was re-viewed by the present researcher on 02.07.07.

The video starts with a discussion on what is microteaching and how the session will be conducted and follows the teach-review-re-teach technique. Then one of the trainees goes into a classroom to conduct a micro session. It is a session on the parts of flower.

In the teach part the teacher teaches the part without showing any real flower or any chart.

At the end of five minutes he comes to the discussion room where the mentor as well as his fellow trainees identifies his shortcomings and the evaluators give justification to their mark.

The mentor then gives him hint as how to improve his teaching and he goes back to the classroom to teach the same segment. This time he makes eye contact with his students, shows modulation of his voice, gives facial cues, uses real flower as well as chart to indicate the parts of a flower, invites students' participation at the blackboard, etc.

At the end of the session he comes back to the same evaluation team.

The team again discusses the points for improvements made by him.

Practice Teaching-

QLD.LS&LE.23-

Theme: Delivery Stage of Practice Teaching under SoE, BOU.

SCD.QLD.LS&LE.23-

1. Excerpts from a research paper (1998)-
Preparedness of Science Trainee Teachers of BOU-The School of Education at BOU in its first three years (1994-97) tried to motivate its BEd trainees to go for practice teaching in any of its so-called listed (Guide, 1994) secondary schools. But, in reality those listed schools were neither requested to render this service nor were the head teachers' given any assurance of a financial benefit or given any specific training in this effect. As a result, very few of the non-teachers of this BEd programme went for any real practice teaching sessions and there is no record of any sort to give evidence to it. At each term–end evaluation of the two year long BEd programme, these

distance learners were instructed to come with a fixed number of signed lesson plans of the classes they were presumed to have taken.

As there was no 'school experience supervision team' formed by the concerned faculty of BOU (i.e. School of Education or SoE) there was no official record about how many of the sixty classroom –based practice teaching sessions were really supervised by the tutorial centre faculty members. Hence a figure of 36% scoring more than 80 marks (Table 3) in the final practice teaching examination would in reality have prompted School of Education faculty members to establish contact with at least a representative sample of these graduates. This sample group should thus have been identified as the control group to see how do they fare in real classroom situation once they have bagged 'the pay fixation motivation' mentioned in the BIDE report.

2. TQI-SEP suggestions- That the working group consider various options to improve the quality and quantity of teaching practice. Some ideas are: to have simulation teaching take place during school breaks in a residential situation; increasing the role of head teachers in monitoring and supervision of classroom teaching; that BOU tutors/ TTC trainers have a greater role in managing and monitoring teaching practice.

Teaching Practice-

This area was mentioned on several occasions by headmasters and tutors, as an area of weakness in the current BEd. As it is anticipated that the majority of learners will be serving as classroom teachers during their term of study it may be possible to take advantage of this opportunity to incorporate additional teaching practice time and supervision within their own school setting or in nearby schools.

TCD.QLD. LS&LE.23-

This part id prepared with the help of a part of a research paper presented by the present researcher in 2000-

If the concerned faculty members were given the policy freedom and financial assistance to improve the condition of their programme most probably they would have opted for ongoing policy research on these first batches.If the faculty members were involved in some sort of ongoing research with this first-ever programme of BOU they would certainly be in a better position to remodel this BEd curriculum after a run of eight years.

School of Education at BOU didn't make any arrangement for these trainees to acquire skills on how to handle scientific apparatus, how to arrange and conduct a practical class with students. The other main reason is that as there was no supervision team to observe school experience there is no official record about how many of the sixty practice teaching sessions were really supervised. This supervision is on principle to be done by the course tutors of the tutorial centres.

Learners' Response-

QLD.LS&LE.24-

Theme: BEd Learners' Response on the Created 'LE'.

Table: QLD.LS&LE.24- Findings of the Questionnaire Surveys conducted in Different Academic Years on BEd learners of BIDE, BOU, BOU-TQI-SEP

Source of Data	Responses related to "*Learning Environment*"
Old BEd students of BIDE surveyed in 1994- In the beginning, majority of the students had wide range expectations about radio-TV lesson. They expected related TV news broadcast also.	In the early stage of the old BEd the students had deep level of thought about quite a few concepts like- Interactive classroom lecture are created (40%), Presenters need to acquire good communication skills (60%), Voice modulation necessary (30%), Clear pronunciation necessary (10%), Creation of real classroom situation (60%), Arrangement of students' active participation (40%), Arrangement of community media centres in rural areas (65%) Broadcast of "learning environment" contained radio-TV lessons (67%). The survey result indicates that the students could identify the necessity related to the creation of their own "learner space" for the future radio-TV lessons.
BOU BEd students surveyed in 1994- The students had strong preference for transmission of radio-TV lessons after 8pm news.	It indicates that their home environment was conductive of creating their own "LE" for the lesson at this specific time.
BIDE students questioned in 1995- More than fifty percent of them said they were informed about the nature	The quarterly bulletin "Doorshikkhon" published by BIDE used to give them some necessary information about the conduction of the course. Hence they were informed about the

of distance mode BEd.	broadcast radio lesson.
BOU students of 1997 batch- The students' frustrating response about technical facilities makes it clear that technical facilities are yet to reach them.	Most of the students the old BEd programme of BOU were unaware of the guidance- If you need to speak to a lecturer and can't find them in their office, it would be best to e-mail them asking them
BOU's old BEd students surveyed in 1997- students were aware of the modality of radio-TV lessons.	Till 2003 students took great interest in radio-TV lessons as they contained once-a-week news.
Collaborative BEd students(BOU-TQI-SEP) surveyed in 2008- The students are satisfied with the tutorial sessions, lessons presentation in course books etc. Students are not aware that there is an email service for them to get information from the faculty.	The shortcoming which indicates BOU's indifference to provide ICT facilities for its learners is that no technical assistance is available to them throughout the duration of the programme. They don't even get the computer laboratory facility to do the assignment works of the course Basic Computer Skills.

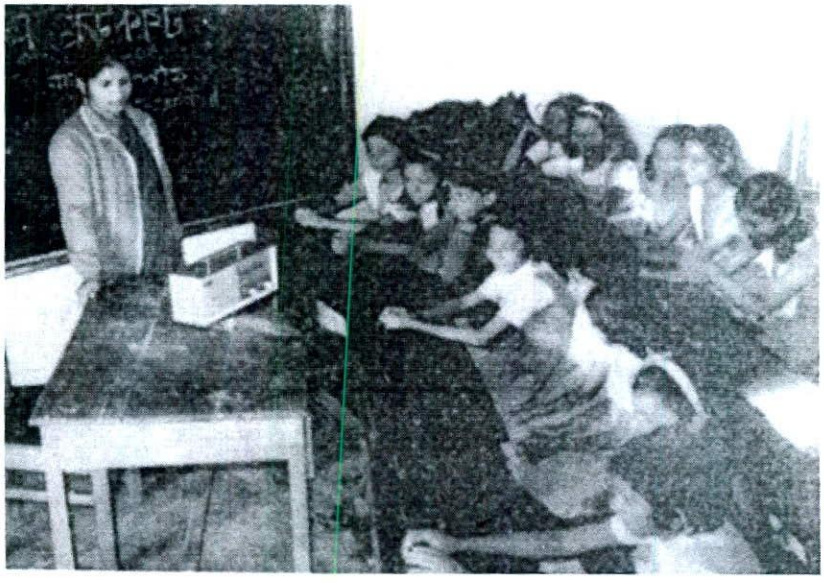
4.2.1.2b: Picture Data Set on PD.LS & LE-

As part of data the following are a few picture data from where creation of the facial expression of both teachers and students are shown reflected.

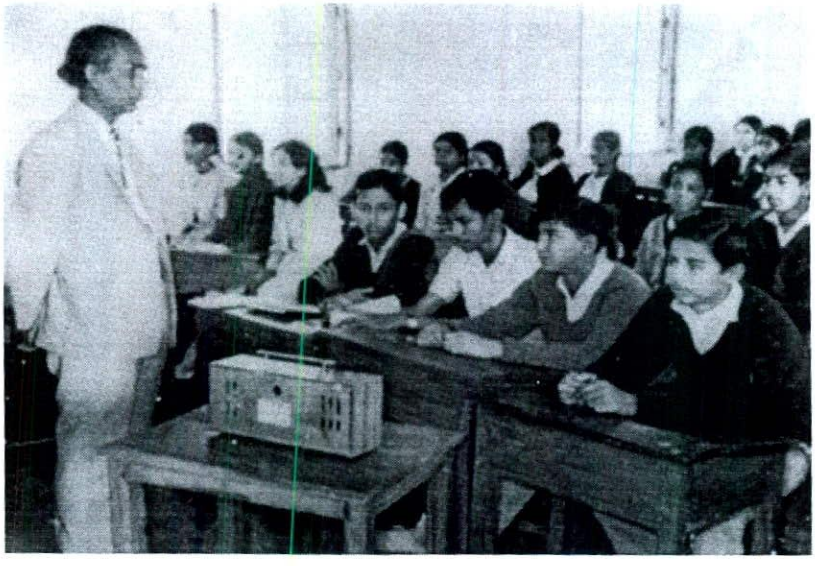
SCD.PD.LS&LE.1-

Figure: PD.LS&LE.1- Pictures showing Creation of LS&LE during "AVEC-Radio Lesson" Sessions in Classrooms-

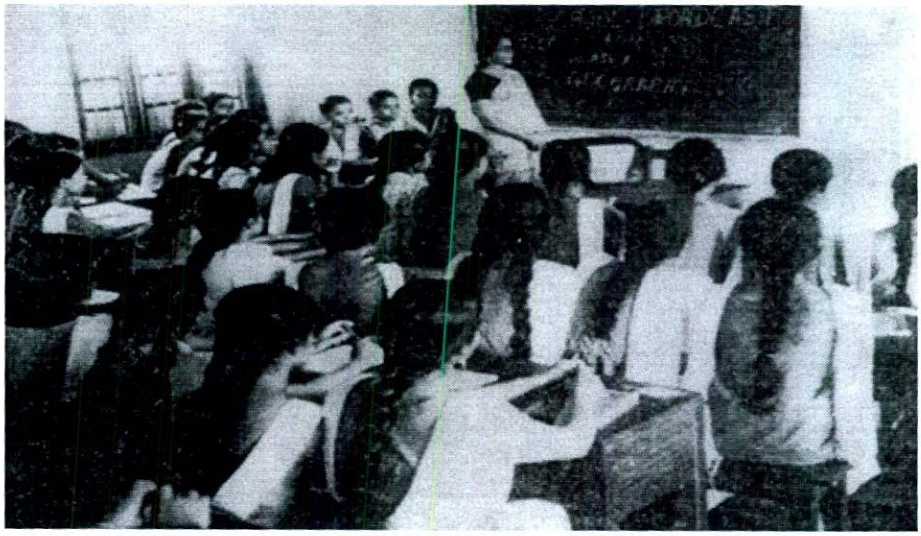
Picture 1-



Picture - 2



Picture - 3



TCD.PD. LS&LE.1-

Picture-1: The facial expressions of the students say that they were free to express their just-learned knowledge, hence proper 'learner space' was there.

Picture-2: Shows that both the students and the teacher had very firm faces, it can be assumed that the creation of the 'learner space' necessary for the students for a fruitful after-the–lesson discussion session may not be there.

Picture-3: It is a girl students' backside picture and the female teacher seems to display a rigid posture. On the blackboard there are three themes- it is a school broadcast programme; for class X and the subject was geography. No further analysis is possible by the present researcher.

The 'learning environment' of the pictures 1-3 say that the learner-group was homogeneous, it was supervised by a teacher, but nothing can be said as to whether the broadcast session was followed by a discussion session. The absence of copies on the students table says that they were discouraged to take note, and it is a positive step towards creation of 'learner space'.

PD.LS&LE.2-

Theme: 'Meeting of the ID' team.

SCD.PD.LS&LE.2-

Picture – 4

Picture-4: It is a picture of 'Meeting of the ID' team. The caption of the picture says the subject selection committee of 1970 was having discussion on the 'school broadcast' programme.

(Data Source: Bulletin, School Broadcast, 1st January-31 December, 1970)

TCD.PD. LS&LE.2-

Picture-4 shows the ID team was a harmonious one- combination of senior and junior teachers.

4.2.1.3- 'Evaluation of Project Evaluation Reports & Research Works (EV.P) on Innovative Uses of ICT' Unit

It was deemed necessary to evaluate the available evaluation reports prepared by the target projects like SBP, NIEMT, BIDE, BOU, BOU-TQI-SEP.

The findings of the research works presented in Chapter Two were explored also to see what they presented on the theme of design-delivery-evaluation of innovative uses of ICT in distance mode teacher education programme BEd of BIDE, BOUand BOU-TQI-SEP.

BOU-TQI-SEP project is still running so Evaluation Report is not available.

EV.P.4.2.1.3.1-

Theme: Researcher's Evaluation of the project SBP Ev. Report, 1983.

Table: SCD.EV.P.4.2.1.3.1– Researcher's Evaluation of "the SBP Evaluation Report, 1983"-

Evaluation
The project was very similar to, what in business terms, is called a joint venture. The partners were the two governments of Japan and Bangladesh in 1978. Although that was the year when the project initiative should have really started, the Project Director was appointed in December, 1980, much later after the equipment for school broadcasting arrived in Dhaka in the beginning of 1980. Aims and objectives of the Project were the following- The goal of the project was to improve school education. The strategy was to utilize Radio Bangladesh where equipment donated/funded by the Japanese government would come into use. It was an innovative step, meant to "supplement as well as well as complement" the traditional teaching which was imparted in secondary schools at the time. Observations: The supply of educational aides (i.e. radio equipment), rather than selection and proper utilization of appropriate aides, was the key factor governing the success of the project. Ultimately, the committee overlooking the project deemed the supplied educational aides as "sophisticated, complicated—in other words, too costly and elaborate for practical use at all schools around Bangladesh". Ten technology-equipped mobile vans supplied to the project were not all utilized by the project from the very beginning. In fact, a number of those vans were dispersed to other media authorities, which was not a planned strategy of the S.B.P project. Moreover, many schools which were ill-prepared for housing the donated educational aides under the auspices of the S.B.P project were unnecessarily supplied with equipment. Certain personnel were trained specifically for appointments related to this project, but later they were given the opportunity to benefit that very project. Instead, they were posted elsewhere where that training they received (at a huge cost) abroad went to total waste. Logistics and quality assurance related issues (i.e. repair and maintenance) were poorly dealt with according to the evaluation report. No one, or no team, was given responsibility for these important issues.

Strangely, the evaluation committee mentioned in the report the fact that film and video facilities were absent for use by the mobile units. The committee was fully aware that the project's success was supposed to hinge on effective utilization of the radio equipment donated/funded by the Japanese government.

Another interesting statement in the committee's report said that instead of focusing on the original objectives-"improving school education"-of the S.B.P project (the topic of this chapter), many of its subsidiary activities focused on Distance Education, unduly that is.

A very common feature of public service delivery in Bangladesh, the uninterrupted run of the SBP project was, according to this committee's report, hampered because of the diversion caused by the focus on achieving success with Distance Education strategies and techniques.

The report also said that the project was not innovative as it was supposed to be.

Another common feature of public service projects—disruptions caused by high-level (in this case, inter-ministerial) meetings-was a hindrance to retaining the integrity of the project's original objectives.

The report admits the fact that the basis of certain observations was a poorly designed survey with an unsubstantive sample of 16 schools (where the population was 1061).

Recommendations:

It appears that the evaluation committee's major concern was how to optimally utilize the equipment procured from the Japanese government. In this context, other fields of education (e.g. Primary Education, Continuing Education for Adults, Family Planning Education, etc) were mentioned where that equipment would bring ancillary benefits, if they were to be utilized. But if that were to be done, then the project in question would definitely suffer. The project evaluation committee could have come up with other alternatives, such as designing an after-school hours educational programme (to be broadcast over radio), to make the best use of the equipment.

Training and proper application of it is another major area of concern. Even in this present day (29 years after the production of the report in question), training goes unused or misused because of unplanned distribution/allocation of trained human resources.

A solid suggestion made by the committee in its report was that a domestic organization's structure (i.e. the Audio-Visual Education Centre) may be considered as a central network to ensure proper timely planning and utilization of donated/funded equipment.

Because of the ill-prepared state of secondary education providers (i.e. secondary schools) in this country, it would be unwise to expect more from the project than what

was originally visualized as the goal of this project.

Theme: Evaluation of the project NIEMT.

Table: SCD.EV.P.4.2.1.3.2- Evaluation of the project NIEMT-

Findings
1. Brochure of NIEMT Video Programmes, 1984(on the output of NIEMT)- Till January 1994 NIEMT produced 27 video lessons of duration 6 minutes- 45 minutes. Worldview International Foundation offered technical cooperation. None of them was based on school curriculum. 2. Self evaluation of radio/TV lessons by NIEMT- Many schools have already shown a great deal of interest in these types of programme (school broadcast programmes in the classrooms). They think that even ordinary students may be benefited by using these programmes. 3. Activities of NIEMT as reflected in the Annual Report, 1984- a. In addition to broadcasting, in cooperation with Radio Bangladesh, educational programme for secondary and primary school students were made, b. The institute has been involved in preparing various low-cost teaching aids and distributing them to different educational institutions. Among these aids are educational audio and video programmes, charts, maps etc. c. Educational films and video films are also shown by this institute at different educational institutions. d. Besides, the institute has been regularly imparting short training to the science teachers of those schools which received from the government audio control console sets (ACCS). e. Different educational video programmes made by this institute have already been widely appreciated by the students-teachers-guardians as well as the general viewers of all levels.

TCD.EV.4.2.1.3.2- The three points of the above Table all describe highly praise worthy achievements of NIEMT. The technical officers were also of the same type of opinion.

EV.P.4.2.1.3.3-

Theme: Evaluation of the project BIDE.

Table: SCD.EV.P.4.2.1.3.3- Evaluation of Policy Implementation Process of BIDE-

Findings
A British Team was invited to visit Bangladesh in November 1980 to discuss the feasibility of introducing distance education system in Bangladesh. Following discussion, a high level Bangladesh team visited UK and the Unesco Headquarters in Paris to study distance learning system with a view to making use of it in Bangladesh. Immediately after the return of the Bangladesh team, two mission one from the UK and the other from the Unesco HQ visited Bangladesh to study the feasibility of introducing distance learning system in Bangladesh. Following reports of these two missions a sub-committee was constituted to prepare a scheme an the project in two phases: the first phase was to cover teacher training for primary and mass education, while the second phase was to cover other areas of education. The first scheme of the project covering both the phases costing Tk. 1166.06 lakh was discussed. The meeting of PEC held on 5-11-81 was finally adjourned over the controversy regarding the administrative control of the project. However, a scheme on the project costing Tk. 499.90 lakh aiming at improving the quality of secondary school teachers through electronic media and proposing expansion of the scope of activities of the earlier project of SBP was submitted to the Planning Commission in November 1982. The scheme was discussed in the meeting of the PEC on 22.12.82. The PEC recommended that prior to any consideration of the scheme it was necessary to evaluate the earlier allied project SBP.
The name of the project was Bangladesh Institute of Distance Education. It said - 1. To achieve the indicated seven objectives (p.3-17) BIDE will use multimedia approach in distance education. 2. It will be an autonomous body in the Ministry of Education to work under the guidance of an inter-ministerial Board of Governors. 3. It included secretaries of seven Ministries and the DG of BIDE. 4. Then a revised proposal was submitted by Director of NIEMT. This time the objective was mentioned as- to promote development of education through media service. 5. In this revised proposal it is mentioned- The PEC discussed the scheme and felt that prior to any further move the SBP must be evaluated.

TCD.EV.4.2.1.3.3- Policy fixation process of BIDE turns out to be very intriguing from the points of the above Table. As the earlier projects SBP, and the merged one NIEMT were rolling there were a number of hurriedly performed activities which culminated in the formation of BIDE. But BIDE project tried very hard even with sometimes hurriedly changed decisions to implement the seven point objectives related to 'use of multimedia approach in distance education'.

EV.P.4.2.1.3.4

Theme: Evaluation of the project BOU.

Table: SCD.EV.P.4.2.1.3.4-Evaluation of the BOU Activities on Research & Use of ID-

Findings
In the project proposal submitted by the BOU Steering Committee there is a section titled Research, Evaluation & Innovative Activities where they say: In order to maintain standards and equivalence with the formal system, BOU will conduct research and evaluation studies on-going basis. During the first 2 years BOU will conduct a comprehensive study on human resource development needs. In the third year a mid-term review will be undertaken. BOU will also conduct studies on the effectiveness of various programmes, methods, and learning materials being used to improve the functioning of distance education.
From January 1994 to July 1998, 33 consultants worked for the BOU project, the very last one was specifically on instructional design.

TCD.EV.4.2.1.3.4-

Even in 2009-2010 conduction of research work is not gaining importance among teachers of BOU as there is very strict provision of financial assistance from the university authority, though its presence was clearly stated by the BOU Steering Committee.

The instructional design work done in the initial project period for the course material of the teacher education programme BEd offered by School of Education earned accolade from the learners. But the current failure is in integrating any ICT components like on-line assignment submission, email contact with faculty or tutor on any topic presented in the course book or radio-TV lesson. That means there is no 'innovative uses of ICT' in the course material production.

The faculty at SoE like all other faculties of BOU still face hurdle in directing learners' interest in the radio-TV lessons broadcast using high-valued government broadcasting instruments like radio and TV. The current shortage of interest among the teacher-presenters is largely due to the absence of a Radio-TV policy on its write-up, style etc.

> If the only adequate medium for teaching a particular topic is television, then the teacher may also be motivated to produce a fully featured videotape for every class;

and even with the assistance of an expert institutional media service, producing this can tax the time and patience of the greatest media enthusiast. At present the faculty members are not in the ID-based preparation of any lesson.

Report on Research Value of Research Works tabulated in Chapter Two-

This part is brought in from the summary prepared in Chapter Two.

It was found in Chapter Two that 'policy/recommendation-design-delivery-evaluation' type of work on use of innovative ICTs in teacher education was not explored so far by any researcher in Bangladesh.

Going through all the research articles categorised in different sections gave the researcher the idea that due to access of technology quite different types of innovations were tried in developed and developing world, making a distinct demarcation line in between the two worlds. While Bangladesh still struggles through first generation technology in distance education, the developed world is in such interactive use of technology using computer, etc, the digital divide between not only haves and not-haves but also between users and hesitators is becoming very prominent there.

Until recently, distance education gave less opportunity for direct feedback from students; thus, it has been found necessary to develop formal procedures for programme evaluation. In the future it may become necessary that individual evaluation projects are carried out with reference to research and evaluation in a number of important settings and results should be reported in ways to give maximum transfer and development effects to the field in general.

In 'Research in Bangladesh Section: 2.2.RBG' it was seen that though quite a big number of research study were conducted nationally on teacher education and distance education there is almost none on instructional design. From their field experience international researchers found out that changes are often initiated on the basis of political aims and goals of the society and/or the needs of specific groups.

Findings from the PhD thesis of Ferrier (1998) cited in Section: 2.2.3(Tech) gives the present researcher some idea of what could be found out through the national picture about innovative technology.

Going through the research papers presented the researcher became that the Unesco recommended technique of research-fed issuance of education related policies is necessary.

4.3- Analysis of SCDs & TCDs

There were in total, four on PIs, twenty on PAs and twenty three coded data Tables on LS&LE; two PD(picture data) Tables and four coded data on evaluation reports, one

report of research works constructed out of the vast data documents collected, sifted and read, re-read to make the grounded model data sets.

The 'innovative uses of ICT in distance teacher education' that were recommended in policy documents were like-

1948-Formation of community centres equipped with books and radio and - provision of mobile vans for the exhibition of appropriate film at such centres;

Selection of foreign educational films and production of educational films in our own country for show in secondary schools;

Committee of Visual Education, consisting of teachers and officers of the Education Division may be set up in due course to ensure proper selection of educational films and themes;

Use can also be made of educational broadcasting;

Radio can be useful in this matter and for this educational broadcasts may become the concern of the Central Education Division who will ensure their integration in the educational conception under discussion;

1957- In order to provide facilities to those whose formal education has been interrupted by the need of earning a livelihood, but who are desirous of pursuing knowledge, technical or otherwise, we recommend that an experimental start may be made with a system of correspondence schools;

March,1970- modern techniques, such as programmed learning could be used in combination with radio and television to increase the effectiveness of in-service part-time training arrangements for teachers;

1992- the use of any communication technology to improve the quality of education;

2002- the development of a national policy for secondary teacher education(made by Teacher Education Task Force of SESIP); planning, developing and training a course of initial teacher education to replace BEd;

National ICT Policy of 2002 -IT Related Distance Education Scheme of the Bangladesh Open University will be expanded through the use of TV and Internet. Private TV Channels should be encouraged to start IT Education Program;

TQI-SEP/BOU- PP 2004: TQI-SEP Project, 2004- On the basis of a capacity assessment BOU will receive assistance within a number of different areas, which will aim for bringing about capacity to develop quality pre- and in-service teacher training materials.

An innovation and development fund will be established and made available to support reforms and innovative schemes in teacher education institutions.

SCDs &TCDs picture tells that-

Transformation phase of a number of schools in to pilot schools for innovative use of radio lessons was a waste of time as the design stage took whole time for the transformation of general schools to technically provided schools and that in twenty well-developed zillas only, no rural school was tried out;

NIEMT was hurriedly formed by the merger of AVEC & SBP to get the financial allocation of SFYP. Financial allocation of both AVEC and SBP were taken in to NIEMT but contrary to the objectives of AVEC, SBP the total 'trained manpower' was then involved in introducing distance learning instead of producing 'interactive type radio, television programmes';

The ADP(Annual Development Plan) allocation for the project SBP was stopped with effect from 1.7.82 and the project was merged with the 'unapproved' project of Distance Education (formation of NIEMT) (Report, 1983, page 9);

As the mobile vans received under the grant were not supplied with video production equipment proper use of these vans was hampered. It was not possible to produce sufficient video educational programmes for want to video equipment;

An 'innovative BEd' was introduced by BIDE in 1987 and audio cassettes were provided to learners, six video lessons were prepared on 'microteaching & interaction analysis', as per recommendation of 1979 , video recording instruments were distributed to TTCs for microteaching recording, re-recording sessions. BIDE tried successfully on quite a few elements of the project but there is no recorded video sessions done in the actual laboratories.

The "selectively coded data" presented above on the PIs (policy implementation) and PAs (policy anomaly) show that the continuity of effort and the process in most of the time lacked vision of an experienced designer. Policies were often modified, re-modified but in the end the ultimate beneficiaries remained short of being served by 'innovative uses of ICT'. And the overall evaluation is that – there is lack of institutional capacity to translate good 'innovative uses of ICT' policies from paper to real initiatives at the ground level in distance education field of teacher education programme BEd;

TV lesson production is still at a very immature stage at BOU and there is no approved policy guidelines on broadcast even.

Direct transmission from Gazipur campus of BOU didn't work out, LAN facility for the RRCs was stopped at a very initial stage, audio-video cassettes were never distributed to BEd learners, nor even to RRC media library for learners' use.

No evidence was found of any kind of formal evaluation procedure at BOU to evaluate its own performance on 'innovative uses of ICT in distance teacher education BEd.

Analysis of the evaluation reports of the projects and summary of research works-

Though most of the evaluation reports were hurriedly prepared and methods were not followed rigorously evaluative values of these reports are quite significant. These can shed light on how they were designed, how they delivered and what were the outcomes.

TCD.EV.P 4.2.1.3.3 clearly shows that Unesco technical help was always essential in trying different 'innovative uses of ICT in distance education' Specially School Science and BED Programme. The it is surprising why the policy setters at national administrative level don't adjust to the Unesco suggestion that any new policy concerning ICT use should be based on national research findings.

CHAPTER FIVE

FINDINGS, DISCUSSIONS & RECOMMENDATIONS

5.1- Introduction

Dearth of national research related to 'innovative uses of ICT in distance teacher education' seen in the literature review presented in Chapter Two states that this is partly due to the fact that in Bangladesh the policy setters don't feel the need to put importance on research data during various stages of their policy formulation process. This is mentioned in Unesco ICT in policy study also (2003). Seeing this vacuum it was considered necessary by the present researcher to invest in a research study to gather grounded data by evaluating innovative type uses of ICT in the field of distance education. The data was obtained mainly in two consecutive phases like, 'selective coding' and 'theoretical coding'; while the basic 'open coding' data table was posted in the Appendices; otherwise open coded data would have taken a lot space in its qualitative word format.

Coding is a process of simultaneously reducing the data by dividing it into units of analysis and coding each unit. After the categories are integrated and synthesized into a core set of categories, a narrative is developed that explains the properties and dimensions of the categories, and the circumstances under which they are connected. This explanation of the phenomena under investigation will give way to the theory developed based on the data in this chapter.

The 'SCDs' & 'TCDs' presented in detail in Chapter Four; were in word-by-word, sentence-by-sentence, through some picture data form and also on a more abstract level to find coherence, anomalies, deviation on policy implementation, design-delivery stages of those policies, and the creation of 'LS&LE' related to the 'innovative uses of ICT'. The Chapter concentrated to a large extent on finding the true picture of the implementation phases of the recommendations and look out for the existence of 'LS&LE' each time a technology was innovatively incorporated by planners/ID designers.

In Chapter Four thus, were presented SCD and TCD data on the design-delivery-evaluation stages concerning 'innovative uses of ICT' of the institutions/projects like AVEC, SBP, NIEMT, BIDE and BOU, BOU -TQI-SEP; data on delivery stages being mainly searched through their ID related activities. In addition to all these it tried to identify the evaluative values of evaluation reports of these institutes. Findings on these areas were searched through nationally performed research works to locate any related findings on the institutes' activities.

In this chapter 'TCDs' on each of the units are presented as data findings. After careful analysis of these data, retrospective and anticipated evaluation models for some institutes are constructed by the researcher. These models are constructed in the light of the Dick-Carey (DC) Model. For some institutes there were the established project models, they were compared with DC Model. A grounded theory is then formulated to plan 'innovative uses of coming ICTs' with the hope that future planners and policy makers will try it after going through the findings and recommendations in order to plan and incorporate need-based technology/ICT-based IDs effectively into different stages of any upcoming distance teacher education programme.

5.2- Findings on 'Innovative Uses of ICT in Distance Teacher Education through Design-Delivery-Evaluation' Stages

It was elaborated and explained in Chapter Three, by what methods and techniques, the significant characteristics of the generated data can be directed towards the formation of a grounded theory.

After an integrated findings with respect to each of the concerned research objective an analysis of the collected data is done by a set of seven questions.

Same headings like PIs, PAs, LS&LEs etc. are used by maintaining the unit links with Chapter Four.

5.2.1- PI &PA Unit

As in Bangladesh like anywhere else secondary education is run by government policies the research objectives of this study were so fixed accordingly.

Res.Ob.1. To identify the policy implementations and policy anomalies in the design-delivery stages of 'technology/ICTs in the instructional design parts of the programmes run by AVEC, (EEC), SBP, NIEMT, BIDE and BOU, BOU-TQI-SEP in both of their school science teaching and teacher education programme BEd.

Findings

On PIs-

The 'SCDs' and 'TCDs' presented in Chapter Four on the PIs and PAs show that the continuity of effort and the process in most of the time lacked vision of an experienced designer. Policies were often modified, re-modified but in the end the ultimate beneficiaries remained scantily served. And the overall evaluation is that –

There seems to have lacking of institutional capacity to translate good policies from paper to real initiatives at the ground level.

Far sightedness of the policy makers can take their country to where their policies foresee. India used Ford Foundation money, technical expertise to go straight for creation of TV lesson and it was wiser than the East Pakistani decision. Radio lesson in East Pakistan could have been designed locally. A well thought policy-design-delivery-evaluation model can carry the type of forward looking work, one shining example is the work completed by the Indian educators is an example which had positive effect in the long run.

It is seen through the data presented in Chapter Four that the activities of both the institutes NIEMT and BIDE were curtailed resulting in the deprivation of the learners of their ICT benefits.

It seems NIEMT was hurriedly formed by the merger of AVEC & SBP to get the financial allocation of SFYP. Financial allocation of both AVEC and SBP were taken in to NIEMT but contrary to the objectives of AVEC, SBP the total 'trained manpower' was then involved in introducing distance learning instead of producing interactive type

radio, television programmes. Though it was mentioned – it is better to use radio-television in the proposed teacher education programme, the follow-up short teacher training to be given on use of ACCS was most probably left undone as no trace of it was found in any document.

On PAs-

In the production stage, the anticipated language translation of the films was not coordinated with the stated objectives. No evidence of translation of the films from English language to Bangla language was found in the whole period of AVEC as none of the films listed in the two catalogues collected by the researcher (in English) tallied with those in the list of films of AVEC brochure.

The objective of teaching by films was left partially un-fulfilled.

Policy anomaly was traced out in the realization of the objective- the objective of the revised project AVEC was that it will eventually assist 100 schools to be developed with respect to Audio-Visual aids as a pilot scheme. But this objective was not taken care of.

'Improving classroom teaching by microteaching' is still not in the main work agenda of BOU's top level administrators.

Collaboration almost always mentioned in project proposal documents are never given serious thoughts once the project work is in place- that was the situation from AVEC to BOU-TQI-SEP one.

With all the inactivity related to 'collaboration', it is seen that policy implementers were not interested in the construction of any collaborative component. There is still frequent mention to the point that collaborative efforts should be enhanced. But the 'enhancement' never happened in collaboration part of any project.

Even 'hurriedly' taken decisions ("in order to save the grant-in-aid from being lapsed") must be diligently put to design-delivery-evaluation stages by timely and well-thought design decisions to bring benefit to the ultimate target group- students.

The equipments once procured were marked as 'sophisticated and complicated' by a group of 'hurried evaluators' not having any technical expert member. From the supplementary scheme of AVEC to the introduction of distance mode BEd – all were perceived by executive orders. Only the merger of BIDE with BOU was done by an Act of Parliament.

There is no official explanation available on non-compliance of the objective of 'direct transmission of radio, TV lessons from Gazipur Campus to BTV and Radio Bangladesh'.

The long standing objective of SBP -Mass media will be used to overcome shortage of good teachers, books and equipment; is still looming over the present institute, BOU.

The dilemma of use of technology in distance education in developing nations is seen through the fact that the opinion is divided between continuing the use of tested technology and testing new and innovative technology.

An example of a weakness prevailing in the national development project sectors- though TQI-SEP recognised BOU as the distance education programmes offering institution it never consulted BOU as partner while conducting the project on use of smart phones. They just conducted a seminar at BOU on the preliminary outcomes of the project.

5.2.2- LS&LE Unit

5.2.2a: QLD. LS & LE Set
5.2.2b: PD. LS & LE Set

Res.Ob.2. Assessing the presence of learner space (LS) and learning environment in (LE) in the design-delivery stages of the instructional design part of course material production for BEd.

Findings

LSs &LEs in Design-Delivery Stages of Radio-TV, Internet Lessons-

State of 'LS&LE in the Design-Delivery stages' as demonstrated through 'Teaching through Projected Films' (AVEC period) shows that there was lack of coordination between the project people, radio authority and the school administrators. At that time the administrators preparing the proposal-revised proposal gave little thought to the importance of this dialogue- 'creation of LS&LE'.

The air timing for radio broadcasts were always within school hours till 1970s but at present it is at odd hours like 5:10pm, which one radio official termed as "play-time". This point that radio lessons are broadcast at a time when the students can't listen to it is a proof that ID part is still not taken seriously in radio lesson preparation. No guidance is provided to students; hence it is more of a general enrichment lesson.

It is known nationally and internationally that children get academic benefit out of radio lessons.

The Design Stage of the Policy 'School Broadcasting System in Bangladesh' of SBP provides the following important lesson: Planners must never make-submit hurriedly prepared project proposals.

The case of modifying BIDE PP n-ieme time should be a negative lesson for policy setters.

The time required to design, develop and deliver the technology-related text materials like radio-TV lessons will be fixed according to students' demands.

If there is any mention of provision of ICT facilities to rural students it will have to be delivered properly till the last point once they are approved.

Proper attention must be paid to the creation of LS&LE.

Preparedness of technical staff to handle ID theme has to be taken with much more seriousness by BOU BEd course material development teams while preparing any Internet-based materials in the coming future.
Before creation of LS&LE during the design stage due importance must be given to any related existing research report. The evaluation reports related to the target insititues of this study should be consulted also.

To create LS in the delivery stage of the radio programmes close collaboration between the offering institute SoE, BOU; broadcasting section of Bangladesh Betar and the secondary schools administrative authority should be formed.

At the present state, BOU and SoE must consider having regular tri-party review meeting, publishing bulletin for the benefit of school students, taking students feedback and remodeling the ID design if necessary.

Teaching of Mathematics and Science should in future be taken seriously.Total failure of the part of 'video lesson production' of the related project gives a must-take task to the designers and there shouldn't be any alternative.

'Second Channel' and Creation of LS&LE- the issue of not providing the Second TV channel is to be taken seriously by BOU authority, at the same time '2009 BTV World Service allocation' must have sufficient number of quality lessons. It is known that at present BOU is struggling hard to produce requisite number of lessons to run through the allocated time.

Failure of introducing 'LAN facility at BOU' inspite of having required instrument on grant basis should be an important evaluative lesson for BOU.

TV lesson production is still (2010) at a very immature stage- there is no approved policy guidelines on broadcast even. Politically volatile situation often arises out of use of certain words, certain topics, some specific presenter, etc.

Res.Ob.3. Policy coherence in the development of design-delivery-evaluation parts of microteaching, tutorial services, practice teachings by BIDE, BOU and BOU-TQI-SEP.

Findings

LSs &LEs in Design-Delivery Stages of Microteaching Lessons & Interaction Analysis -

Faculty of SoE, BOU must take the case of microteaching very seriously, specially the preparation and distribution of TV lessons for use on simulation purposes at the tutorial centres for BEd trainees.

Video equipments to video record the sessions should be sent to the tutorial cnetres in default to the RRCs by BOU authority where trainees will be allowed to follow the technique of teach-re-view-re-teach.

L E for BEd Learners of BOU-TQI-SEP at Tutorial Centres-

The data presented in Chapter Four was a reflection of the evaluation stage which shows the negligence of proper study of the stage of project proforma.

Nothing of the sort of suggestion was prepared in two years trial run period time by BOU or by TQI-SEP.

In the old BEd improved communication strategies between BOU and tutorial centres weren't implemented including regular meetings to receive feedback, exchange of information and ideas, identify the problems. These meetings should be arranged and the members list should include representatives from certain related Divisions and the SoE.

Techniques of Tutoring at TQI-SEP-BOU BEd should adopt the interactivity type. There should be some evaluative instruments in place to collect reliable information on its effectiveness.

It is sadly noted that the present distance mode BEd offering institution, BOU isn't yet providing computer laboratories for its learners.

It is also found that there is no institutional collaboration in between BOU and Government Teachers Training Colleges (TTCs). TTCs are offering the service of computer laboratory for their own students but as BOU authority is yet to consider paying caution money and honorarium for the demonstrator who are permanent employees of TTCs the laboratories are not open for distance learners and these learners are at loss.

Findings from EV.P

Res.Ob.4. Evaluating the evaluative values of projects & research works.

It was found out that some internationally published research papers spread news about hypothetical achievements like- Bangladesh Open University relies heavily on ...computer networking and the internet(paper 8: Ali,2002).

It was found out that female distance learners of Bangladesh possess strong determination to complete their respective education programmes in spite of many hurdles. There should be plan to help needy female distance learners of BEd with some sort of scholarship money.

In Bangladesh the distance educators are yet to put importance on conducting research studies in this field though internationally acclaimed distance educators are highlighting the importance of research on different aspects of policy related to distance education. It must be seen that research is needed to provide the context within which distance education is developing along with the inputs that are needed to effectively implement distance education opportunities. And, unlike the past, in the present era policy makers wishing to initiate or encourage innovation and change in incorporating ICT in education will need to undertake a policy audit to take a broad view of the interrelated policy aspects which might need reform and new legislation.

The present researcher is of the opinion that like Masood, faculty members at BOU should conduct a ten or fifteenyears longitudinal study on use of technology before applying any new technology for the delivery of learning materials.

Findings

Res.Ob.5. Suggesting a technology-based instructional design model for learning material development of the BEd programme, which could eventually be used for BOU-TQI-SEP BEd which got introduced in 2008.

Findings on this research objective is sought from an analysis based on a set of seven questions, in seven steps framed for checking the presence as well as nature of ID Models of the target institutes. These steps were formulated taking the idea from 'An instructional design model to teach nature of science' by Koksal (2009).The original Table in in Appendix 8.

Step 1- Did the designers identify instructional goals meaning whether they included expectations about outcomes after instruction?

Insti.	Findings
AVEC	International technical help including the know-how of drawing up an appropriate ID model started to come through Unesco since 1959; a good number of expatriate experts rendered help to AVEC and EEC staff in the initial stages. Though no concrete data could be generated from any document there is indication that these experts helped in the stage of identifying instructional goals also. In fact the necessity of any proper Instructional Design was of no importance at that time.

SBP	Though SBP distributed and worked for radio lesson through ACCS instead of simple radio sets the effectiveness from the learners' side was not considered important.
NIEMT	No data was found.
BIDE	there is no evidence that these programmes are recorded by the teachers and played back in the class room to aid/supplement hisown teaching.
BOU	External consultants like Chris Yates, John Dekkers prepared different manuals in the project period.
BOU-TQI-SEP	Instructional goals were mentioned in project Proposal of TQI-SEP.

Step 2- Did the planners go through prior determination of curricular arrangements driven goals set in school environments?

Insti.	**Findings**
AVEC	Though no specific answer to this step was found by the researcher in her self-conducted f-2-f interview or going through documents, Section 4.3.3a- PD shows that experts' meeting was a regular phenomenon to fix the radio programmes.
SBP	Answer to the question of the step is found through the comment in 1983 Evaluation Report of SBP- the project personnel didn't pay much attention to SBP as they were busy on developing activities related to distance education programme of BIDE.
NIEMT	It had to continue the main activities of AVEC &SBP added with the work of distance education formulation.
BIDE	Answer to was sought from the Evaluation Report of BIDE, September 1986- "Although the school broadcasting are regularly done and are of reasonable quality there is no evidence that the students are really benefited by this programme.
BOU	Teachers of the School of Education, BOU began their academic work in 1994 and initially the main work was to field-test the modified BEd course books which were in reality adapted version of those prepared by BIDE back in 1985-87.There was one designated co-ordinater to oversee the academic side of radio-TV lesson preparation. But no contact was maintained with secondary schools. The syllabi of the school-based subjects always reflected secondary school level curriculum.
BOU-TQI-SEP	SESIP project proposal had done all these works prior to start of TQI-SEP project.

Step 3- Did the planners analyse learners, embedding context and study context and conducted instructional analysis?

Insti.	Findings
AVEC	As the huge radio sets distributed in the 1950s were gradually replaced by transistor radios in schools it seems there was some sort of analysis of learners. The institute AVEC maintained record of the list of radio sets distributed, returned by schools, etc. Hence formative report on the distribution side only was operative. Picture Data PD1generated in Chapter Four shows that a good number of classrooms were conductive of creating "LS&LE". Picture-4 of the same Figure being a picture of a meeting session of the ID team reveals that the subject selection committee of 1970 was having discussion on the 'school broadcast' programme.
SBP	After the formation of the institute there was no initiative to arrange students' discussion session in spite of a specific suggestion- 1.Recommendation of 1979- "An autonomous type Institute of Educational Radio and Television should be set under the Ministry of Education. It is recommended that serious efforts are mounted to make the console – based broadcasting programme a meaningful exercise. Otherwise most of the inputs provided may prove to have been wasted." This SBP evaluative study of 1983 was based on a narrow sample. Only 16 schools were surveyed out of a total of 1061 that received audio control console sets.
NIEMT	In it short span of life time NIEMT continued to work with AVEC & SBP works.
BIDE	From SCD nothing could be brought in here to suggest that students behaviour were observed closely. Though different internal reports of BIDE indicated that workshops were held to the benefit of preparation of radio-TV lessons.
BOU	During the project period to satisfy the donors there were evaluation committees for the different components of learning materials. But afterward, till now there is no formal evaluation, meet the learners session. And the radio-TV lessons are always broadcast in odd hours- learners are not at all benefited.
BOU-TQI-SEP	As TQI-SEP is a continuation of SESIP, the preliminary works were done by it.

Step 4- Did the planners seek answer to the question- "what entry behaviours including skills, attitudes and knowledge are required of students to begin the instruction"?

Insti.	Findings
AVEC	The "radio programme brochures" had detail description on how to conduct a class during and after the radio lesson broadcast. Hence as theoretically the class teachers of AVEC period were alert of the preparedness they might have helped the students to get ready also.

SBP	The recommendation No 11.9 of 1983 report – "These console sets are very costly and sophisticated electronic equipments." 'There should be more dialogue between the schools and the project.' But no information on this suggested dialogue was found.
NIEMT	No data was found.
BIDE	From SCD nothing could be brought in here to suggest that students' behaviour were observed closely. Though different internal reports of BIDE indicated that workshops were held to the benefit of preparation of radio-TV lessons.
BOU	In the project period of BOU there was a radio-TV lesson review committee, but it became non-existent after the project period. Now there is an internal review committee but it maintains no connection with learners.
BOU-TQI-SEP	Once distance mode BEd was started in 2007 surveys were taken by the project TQI-SEP.

Step 5- Was the development of assessment instruments of all these institutes based on the objectives?

Insti.	**Findings**
AVEC	The teacher of Barisal Zilla School, Clinton said they seldom asked questions, hold discussion session or let "peer group discussion among students" to happen.
SBP	The recommendation No 11.9 of 1983 report says- 'There should be more dialogue between the schools and the project.' But no information on this suggested dialogue was found.
NIEMT	No data could be found or constructed with any FGD.
BIDE	Project Proposal of BIDE, 1981 says- BIDE conducted a single students' opinion survey but no formal evaluation report connected to it could be traced. Some likely answers were collected from the 1981 Project Proposal of BIDE - "These console sets are very costly and sophisticated electronic equipments.It was traced by the researcher that BIDE- prepared insrtuctional manual for the use of ACCS,

	printed and distributed programme schedule to schools, training were given to school teachers to handle the ACCS, 1. conducted formative evaluation of teachers at the end of the short training sessions on how to handle the ACCS. No data was found on student evaluation. Post-lesson explanatory sessions at Mahakuma level schools were never taken care of, class routines didn't tally with radio broadcast; With ACCS radio lessons it was seen that sufficient time for learning and practice was not given to either of teacher and student groups.
BOU	During project period all works were performed to satisfy the conditions of PP but at present it is very difficult to say whether stated objectives of BOU are really followed or not.
BOU-TQI-SEP	BOU-TQI-SEP BEd is still ocntnuing and the evaluation will be done by TQI-SEP in mid 2011.

Step 6- Was there any step to determine the mode of learner participation (group or individual)?

Insti.	Findings
AVEC	No data could be traced.
SBP	"During discussion with the students it was noted that they sometimes found it interesting and they came to know something new which was useful for them. But they want more detail, elaborate and spontaneous lectures by the speakers".(SBP Ev. Report, Appendix M,9)-
NIEMT	NIEMT worked under SBP & AVEC objectives.
BIDE	In PP the activity was clearly stated.
BOU	In PP the activity was clearly stated.
BOU-TQI-SEP	In PP the activity was clearly stated.

Step 7-Were assessment and other related activities prepared by considering learning theories and educational research findings?

Insti.	Findings
AVEC	No data could be traced.
SBP	No data could be traced.
NIEMT	No data could be traced.
BIDE	BIDE conducted one Questionnaire Survey as part of its research work.
BOU	BEd TV lessons are usually reviewed as demand of State decision and not on the basis of curricular change.

BOU-TQI-SEP	TQI-SEP is going through this work at the closing stage of its activity.

Summary of the Findings-

It is seen that though most of the works are done by each and every project the visible effects become very short-lived as the motivation factors don't live for long.

In the next sections established models, retrospectively created models, proposed models, proposed Grounded Theory, discussion and recommendations are presented one by one.

5.3- Base Model: Dick-Carey Model

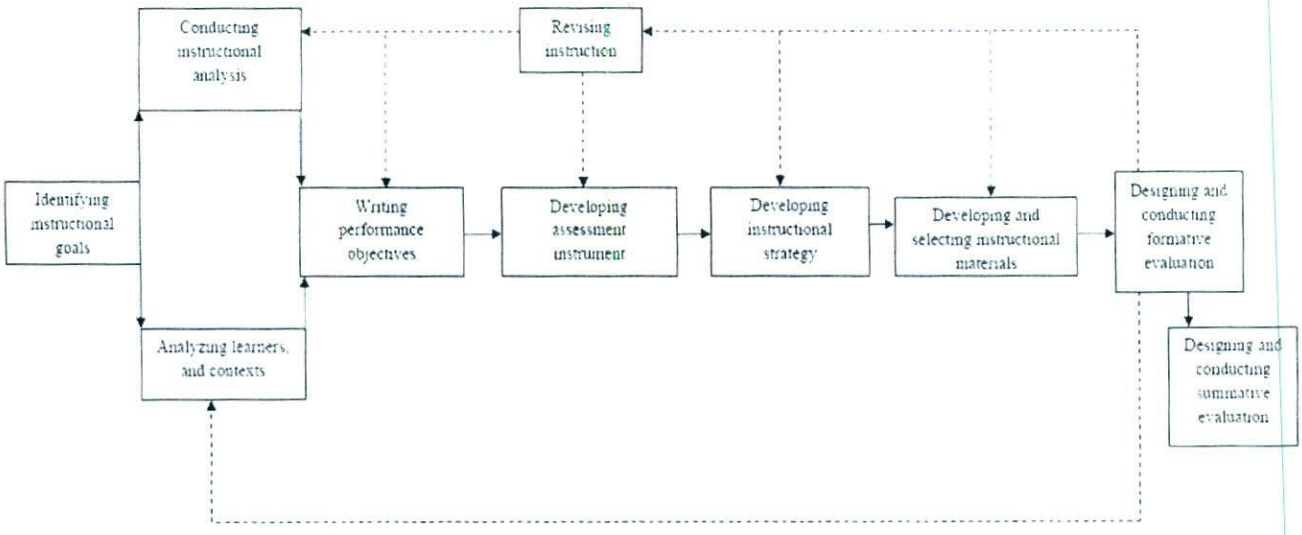


Figure 5.3.1- Dick-Carey Model which was consulted as the base model.

The model has all the essential components for creating ID which are always overlooked by the faculty of SoE, BOU. Conduction of instructional analysis has to be taken seriously for inserting any innovative use of ICT for the creation of proper ID.

5.4- Analysis of Findings: Created Models

5.4.1- Created AVEC & SBP Model

It has been described the related SCD and TCD in Chapter Four that during AVEC & SBP period there was no advanced theoretical basis for construction of ID. Expatriates consultants were here, and as the very beginning teacher training component was linked to teaching science students with film projectors the science teachers were given a short over-seas training. But there was no effective monitoring component as the collaborative Monitoring Committee formed with Dacca TTC couldn't perform its duty with any visible activity.

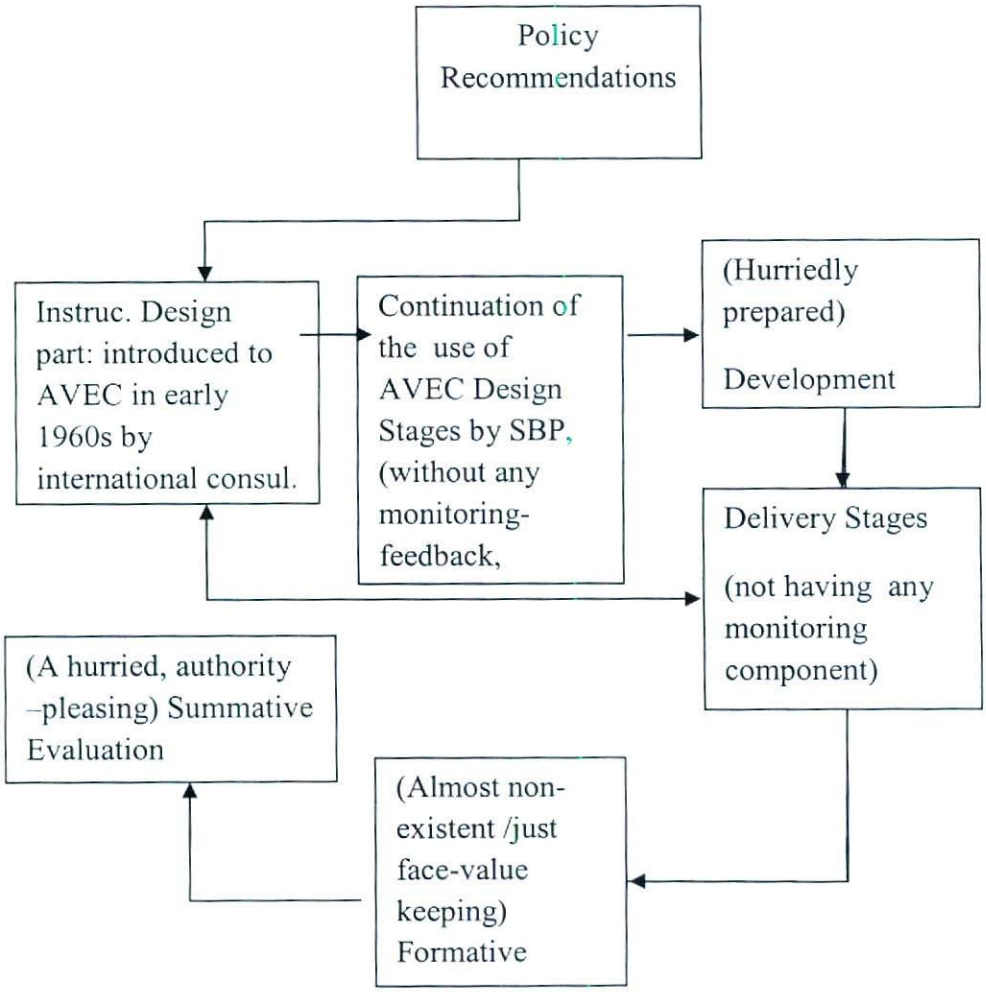


Figure: 5.4.1- Created AVEC & SBP Model

NIEMT existed for very a short time and it most probably couldn't operate through any created ID model.

5.4.2- Created Model of SoE, BOU

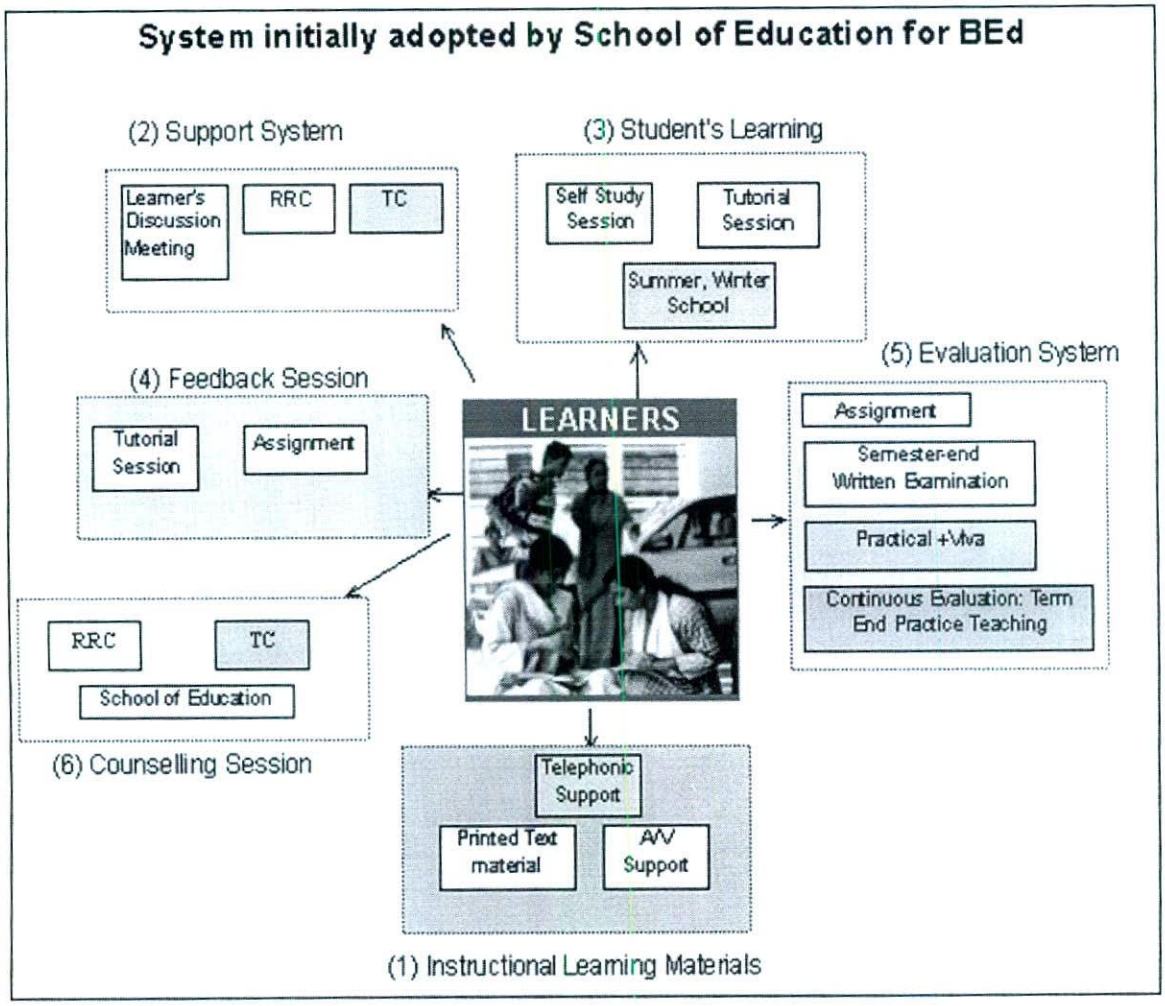


Figure 5.4.2- Initial ID Model being used at SoE, BOU as was drawn by the present researcher in 2001.

5.5- Research Generated ID Models

Summing up the coded data findings followed by the seven steps' analysis the ID model was created in the next section. After forming the retrospective corresponding ID models of AVEC and BOU a grounded model is at this stage proposed. The model comprises of the following sections 5.5.1, 5.5.2, 5.5.3 -

5.5.1-Steps of formulating an ICT-based Learning Model

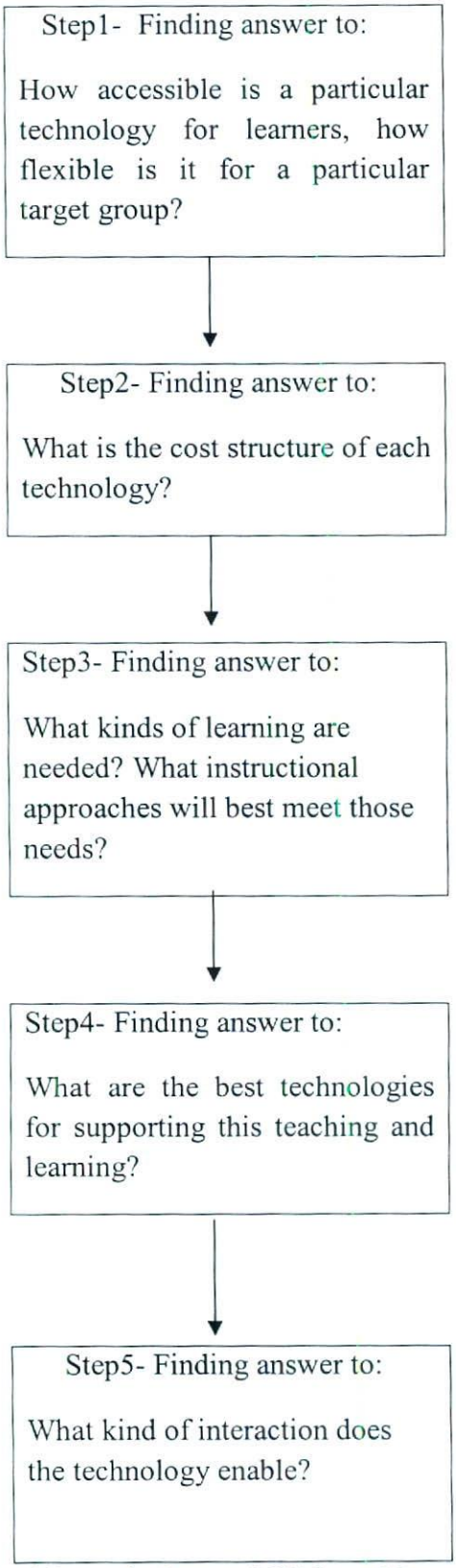


Figure: 5.5.1- Steps of formulating an ICT-based Learning Model

5.5.2-Proposed ID Model for LE oriented Radio-TV Lesson

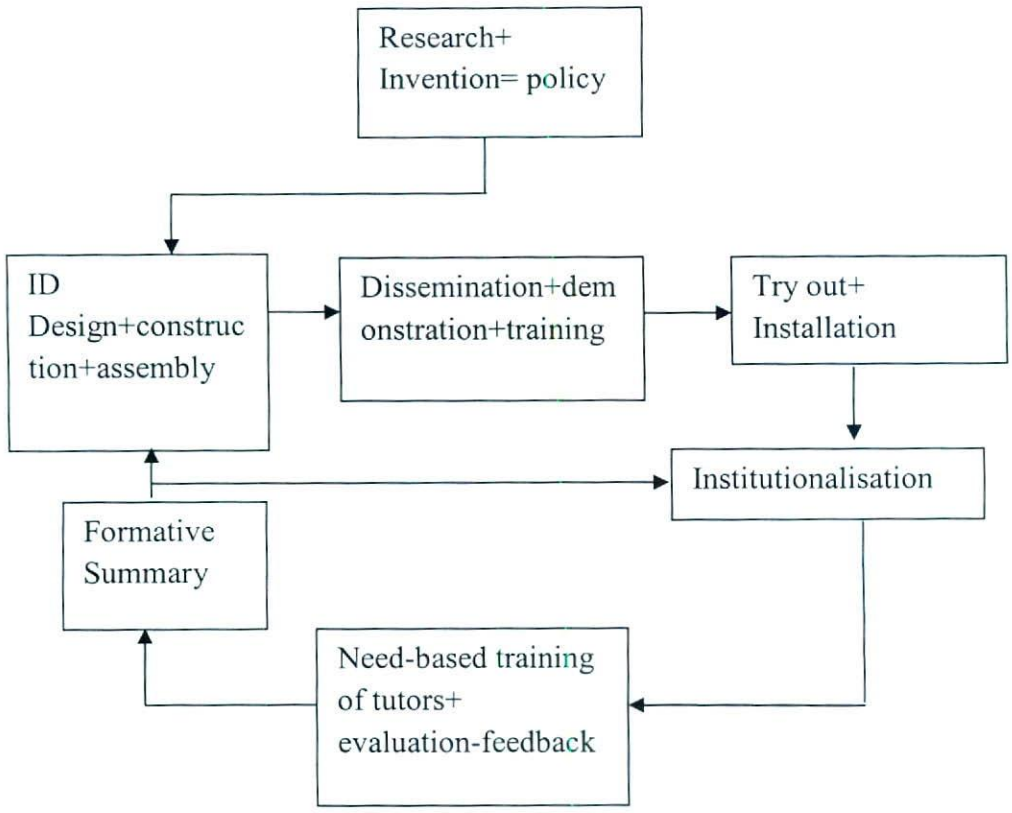


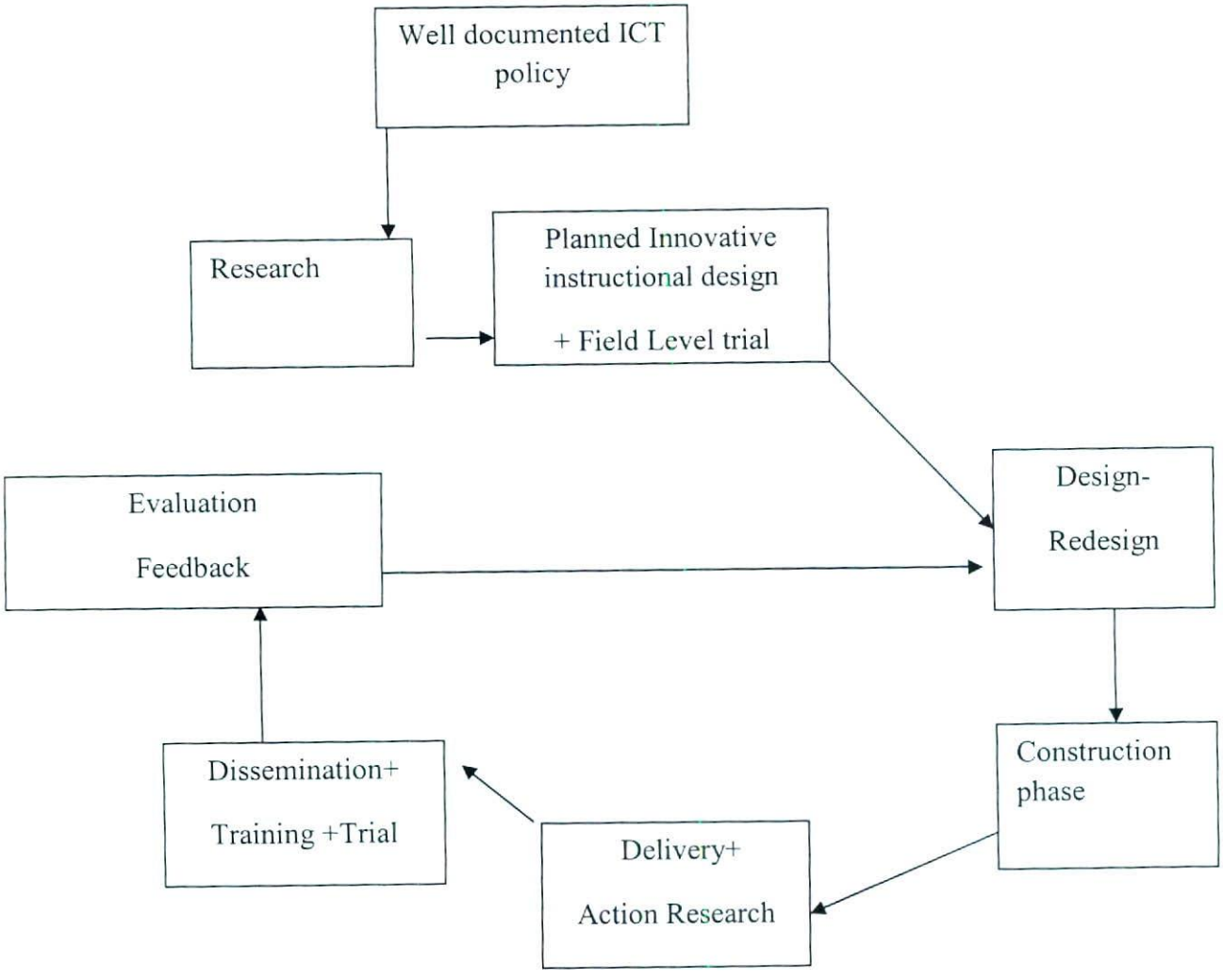
Figure: 5.5.2- Proposed ID Model for LE oriented Radio-TV Lesson

5.5.3: List of Technology available at BOU

Activity	Availability
AUTONOMOUS LEARNING WITH CD-ROM: BOU produced only one CD, on request from Ministry of Information in 1996-97, the frequency of its use is unknown.	Not available to BOU learners
INFO-TELEPHONE BOU learners often make phone calls(mostly cell phones) to know the examination result.	Since BIDE(not by cell phone though)
E-MAIL FROM TUTOR	Very rare
E-MAIL FROM LEARNER Learner seldom asks for information on assignment, enquires about admission criteria.	Very rare though the receiver-side facility exists
TELEPHONE COUNSELLING Learner discusses the assignment topic with the tutor instead.	Not very popular at BOU
POST-MAIL FROM TUTOR	Not in common use at SoE

Figure: 5.5.3- A list of existing Technology at BOU that could be explored in the ID delivery stage of Teacher Education Programmes.

Figure: 5.6- Proposed Grounded Model



5.7-Discussion

The study examined the integral process of policy/(recommendations)-design-delivery-evaluation of the introduction of innovative form of technology in institutionalised secondary science teaching cum teacher education programmes and it had to be done all the way from the beginning stage of making of related recommendation– the year 1948. The real ground breaking point later found by the present researcher to be the year 1939, when a radio transmission station was set up at Mirpur, Dacca. It was a decision of the Allied Force during WWII as a step of their war propaganda. The educational institutes or the population for the study were actually all vertically embedded into the final one-BOU; they are AVEC, SBP,NIEMT, BIDE. EEC was added as a by-institute as it was referred in AVEC, SBP and eventually provided some vital information.

The policy planner in 1986 proposed that administrators like secretaries of different Ministries' run the Board of Governors of BIDE (Report of the Appraisal Committee on 1st semester performance of BEd ,May 1986) little was it felt that only administrators never be at the top decision making body. At present the secretaries of MOE and MOI are members of BOG of BOU but majority are academicians.

It was a daring step to start BEd by distance mode in 1987 with no senior teacher-trainers at BIDE.

Decision of Interministerial Meeting held on 03.03.82 dissolving a task force which was working on Distance Education perhaps says that Ministerial level decisions in developing nations are sometimes hurriedly taken without giving proper thought to its consequences.

AVEC & SBP be merged to shoulder the responsibility of Distance Education is a decision while forming NIEMT is another example of not well thought plan as that way 'innovative uses' related works got slowed down.

All these anomalies, changes cited above were brought into approved project works without any educator's, ID designers' approval.

The Grounded Theory Model of this study states that-

The issue of technology adoption came out to be very important from this research study. Purchasing and maintaining appropriate equipment, and training teachers and facilitators/tutors to use it effectively- as was done by AVEC, SBP, BIDE were found to be necessary conditions, but they were surely not sufficient in themselves to assure an educational institution and excellent education component.

Any innovative ICT based equipments brought home with hard earned foreign grant should be installed to the point of total perfection.

Any secondary school level project should first of all go through all the evaluation reports of the institutes taken as population under this study before writing the village or rural. The electricity problem is far more acute now than it was back in 1956, 1966, 1980s

The present improved road access is there for the easy mobility of mobile vans if any future innovative ICT-related project considers the component as effective.

Evaluation Committee Reports most of the time indicated over the face pictures. These reports indicated that there were other factors involved, many of which were affective rather than cognitive, such as tallying with class routine, user-friendliness and the ability to implement learner participation.
Successful innovative uses of ICTs must take into consideration the social and political climate of the institution, and must also reinforce the authority of the teacher, rather than undermine it.

To start with this section, the presently functioning institute BOU is set as the target institute; which is actually the culminating point of all other institutes taken under consideration by this study. It has been found in Chapter Two that in developed and even in a number of developing nations' open universities the most popular and common methods of communication used is electronic mail (e-mail), bulletin board system (BBS), Internet (using chat programmes, telephone based audio conferencing, and video conferencing with 1 or 2 way audio via broadcast, and closed-circuit or low power television; but the real situation at BOU in Bangladesh is quite frustrating. BOU has theoretically all the ICT possibilities to bring learners close to sustainable ICT but the real situation is nowhere near to action. Even the University of South Pacific is working towards a transition of lecturers from a conventional teaching-learning environment, towards new ways of teaching that emphasise interaction rather than content delivery but at BOU faculty members. In reality BOU is yet to start a pro-active process formula on use of ICT.It seems there should be more of institutional and administrative capacity to translate good policies from paper to real initiatives at BOU.

The study was mainly based on finding 'innovative uses of ICT' and the innovative uses were like the following-

In 1959, innovative uses of ICTs was like-

> To develop school based community centres for better utilization of TV, radio sets, and to support the formal and life oriented education programmes.

Hence it was innovative Use of Mobile Vans of AVEC, SBP, BIDE in Rural Areas, film show to science students by projectors, etc.

In 1982, for NIEMT it was 'to promote development of education through media service.'

The 1994 touch of innovative use is best described by a learner of BEd of BOU-

> As I was listening to radio programme (one day), the announcer pronounced the words Open University- and natural curiosity arose in me.

In SFYP of 1980-85, it was the following-

> A new concept of teachers' training (like microteaching) will emerge in the teacher education programme in the country.

During the project period of BOU it was

> Direct transmission of radio-TV lesson from Gazipur, LAN service enveloping RRCs, etc.

During the on-going collaborative BEd it was the production of interactive video lessons on microteaching.
Creation 'Second Channel'.

The anomalies that resulted in some half done works can be summed up as the following-

It is suggested that BOU or any other distance education institution using technologies as part of ID design should start the process by making a summary of the related research findings and follow the necessary steps of proposed models A,B, C, D for the formation of the required integrated model. Once it is placed in action in the delivery stage it has to be continuously monitored to trace the acceptance level by taking opinion of faculty, tutors/facilitators, students and administrators.

The decision-making on the choice of technology is suggested to be based on an analysis of a set of questions which may sometimes culminate in the following points. If so happens then appropriate feedback-monitoring measures should be taken. The points are -

With the use of each innovative technology the text material production unit must start by searching for reliable research data on the situation, consider giving importance to the content of the curriculum, make in depth study to see students' needs, plan instructional design and only then start to prepare text material. It must also be tested before making a final version.

New technologies will always need to be demystified for the benefit of those who wish to use them. It has exploited the major advantage of these media- their ability to make the images of the world more accessible- within a community-outreach framework that compensates for the technologies' lack of interactivity. In parts of the world that have not had access to high-technology infrastructures, simple media and ingenious techniques for their educational use are commonplace, and the traveling player–educator tradition has not died in these countries. Neither has the economic resources to overcome the logistical problems that have obstructed the optimal use of earlier technologies, and each has something to offer the other in partnership.

The future potential of ICT-based instructional design embedded in education programmes of Bangladesh will only be effective if its use is based on tested educational concepts and slowly increasing possibilities offered by it. The development of ICTs in education institutions is related to the development of a national ICT infrastructure.

Following Bates (1997) it can be said that at this age of ICT, teaching and learning issues are less strong as discriminators than access or costs, partly because of the flexibility of different media and technologies, and the ability of teachers and learners to make the best of any given situation.

Knowledge remains abstract and pre-reflective until researchers engage in the circling of consciousness, which is not a linear process but one involving abstract-reflection to reflection-in-action and embodied reflexivity. It is an activity characterised by embracing knowledge tensions with integrity, truthfulness and commitment. A researcher's pattern of learning and being creative involves dipping in and out of knowledge with the faith that she would reach moments of insight and illumination. Being a consumer, a critic and a creator of knowledge, requires participation in the world, immersion, interpretation and reflection of understandings.

As a whole, this study was thus very self-motivating to the researcher to the point that it encouraged her to continue document data collection in order to bring to surface the complete picture concerning use of technology in school teaching-teacher training in one piece. The expectation of the researcher was that the study will help the think tank of the 2010 Education Policy Implementers to draw realistic plans to bring significance to the necessity of solid and sustainable policies to run better the future models of education.

Rapid changes in technology have changed global distance education field. New policies are being established in different universities worldwide that will determine how distance education is employed and used. The growth and impact of distance education and the opportunities it offers are directly linked to the availability of new technologies.

With distance education efforts moving towards increased collaboration, policy research is needed to aid decision-making.

5.8- Recommendations

It was ascertained that all the related recommendations were rather to be well grounded to contain the later stages of design-deliver-evaluation. The institutes' formative and summative evaluation reports were almost all found out to be on safe side, incomplete, hurriedly prepared to satisfy the authority in question. Most of these evaluation committees almost never took time to read the concerned project proposal thoroughly and they couldn't really oversee that there were real close linkage in between all the above-mentioned institutes.

In this section necessary recommendations are made by focusing attention on analysis anomalies in between policies and the later stage delivery rather than simply seeking to supply answers to questions posed in the first chapter.

The recommendations are presented in the following sequence:

Recommendation #1- Need of Distance Education Policy.

It is feared that the objectives set for BOU in the Act passed by the National Parliament in 1992 are taken by both the government and the BOU administrative authority as equivalent to policy on distance education. If this remains the case then it needs to be substantiated by adding many more important elements to make it precise, up-to-date. And there must be an apex body to make this much needed updating which has to start playing the role of leader henceforth.

Recommendation #2- Coherence in between Education Related Recommendations and Realities like ICT policy.

It was found that The Govt. ICT policy (draft of 2001)- IT related Distance Education Scheme of the Bangladesh Open University will be expanded through the use of TV and

Internet, Private TV Channels should be encouraged to start IT Education Program; got changed into the following in 2007- Use the potential of ICT for delivery of distance education.

As there is no specific policy related to use of ICT in education, BOU will have to work in close collaboration with UGC and Ministry of Education to get its own ICT policy approved. And only then BOU should get into design-delivery stages of ICT based Instructional Design for its future academic programmes.

Grounded data presented in this chapter in the form of theoretical coded data show that there is no goal-oriented national policy yet on education in general and distance education or ICT-based distance education. In the field of 'introducing a new form of technology' national policy makers as well as designers continue to give importance to the preparedness of the teachers and learners but there needs to be taken many more planned initiatives.

The policy maker's judgment will be influenced by related research works, by evidence on outcome and on costs of the planned inclusion of ICT.
And the existing evidence of coherence on the whole process of 'plan-design-deliver-evaluate' is found to be far short of minimum to be sufficient, reflecting the complete absence of any good research data on the outcomes of the beginning project in the 1960s.

Recommendation # 3- Welcoming Teachers-Instructors' Positive Attitude towards use of any Innovative Technology.

The engagement of innovative technology /ICT in learning alters the traditional teacher-student relation, and as a result, there come changes in the roles of teachers/tutors. It has been felt that BOU teachers' attitudes towards ICT are connected to socio-cultural, professional and technological barriers. All faculties, be them full time faculty member, part time tutor or audio-video lesson presenter at SoE must be skilled in the use of technology for learning, and must have consistent access to professional development in the support of technology use in teaching and learning.

Recommendation # 4- Systemic Approach to 'Innovative Uses of ICT' Implementation.

Integration of ICTs in the functions of any organization is a complex process that needs to be fully conceptualized and defined from the beginning. It would be harmful to embrace the ICT integration process without clear plans to guide the way. The institutional ICT policy of BOU and strategic plan once formulated should be well defined to provide a framework for the development and implementation of specific ICT projects. The diversity and competing interests of different stakeholders at BOU should be recognized when developing ICT policy and a strategic plan. The following issues, among others, should be taken into consideration:

a. ICT infrastructure already in place at BOU,
b. ICT skill levels at BOU,

Recommendation# 8- Creating an Interactive Learning Environment.

There are two rather different contexts for interaction, the first is an individual, isolated activity like the assignments that were incorporated in the old BEd of BOU; and that is the interaction of a learner with the learning material, be it text, television or computer programme, the kind of which is incorporated in to the printed text but yet to be introduced into radio, TV lessons. Insertion of a careful instructional design, which considers who is going to learn what, by what means, in what kind of circumstances, to what effect and with what purpose in mind is necessary.

Recommendation # 9- Activating Importance of Tutorial Service in national BEd.

It is recommended to make plans of tutorial service in such a way that the tutors and core faculty members of SoE -

a. Do not suffer from lack of confidence regarding innovative work with ICT,
b. Get equipment and opportunities to learn from each other in a relaxed way.

Recommendation # 10 - Effective Conduction of Microteaching.

For effective conduction of microteaching sessions tutors need to posses the following three elements: moral purpose, knowledge base and the practical skills. Moral purpose will take care of a commitment to providing the best possible instruction to all students irrespective of their social or cultural background. It must foster a sense of caring towards the students and a desire to make them best-fit for conducting real-life classroom sessions. It must be carefully observed by the concerned tutor that a teacher can possess the basic mastery of the subject matter to be taught, s/he must also have a firm grasp of basic principles of pedagogy along with a basic understanding of child development concepts and the socio-cultural-historical context of schooling. Along with the practical skills that a teacher acquire, the skillful use of a variety of approaches to classroom instructions, s/he must have the capacity to assess student progress and adjust instruction accordingly.

Recommendation #11- On use of cost-effective innovative technologies including email and sms services.

A lot more research is needed on how to exploit the new possibilities, teaching-learning strategies and social and cognitive aspects of learning in the new technological environments using email and sms facilities.

Recommendation # 12- Rigorous Use of Research Grants and Research Groups.

An effective measure like 'Innovations in Distance Education (IDE)' that was launched at Penn State University in 1995 should be a welcome move.

Its purpose should be to help university create a supportive institutional culture in which the possibilities of distance education could be realized. The primary components of any similar project would be the 'Faculty Initiative' and the 'Distance Education Policy Initiative'. The mission of the 'Faculty Initiative' is to be to develop a deeper understanding of the issues and opportunities presented by distance education, create new teaching and learning approaches, and empower faculty to become leaders in the effective use of distance education. The mission of the 'Policy Initiative' is necessary to develop and promote institutional policies and infrastructures that are supportive of distance education.

Recommendation #13- Necessity of Planned Professional Development Activities including Need-Based Training.

In order for the above recommendation to materialize the institute must organize continuous professional development programmes for instructional designers, faculties, tutors so that their reluctance towards adaptation of technology can be kept at a minimum. Faculties and tutors should also be provided with intensive training in distance education.

Research is needed to provide the context for developing a set of categories of guiding principles and practices of the design and development of sustainable ICT-based TQI-SEP BEd programmes. Because there are real demand on research and evaluation of distance education, priorities need to be established to provide some guidelines for BOU teachers/researchers.

Recommendation # 14- To set up an Institute/Department/Division of Educational Technology within BOU.

It can provide advice on the use of information, communication and other modern technologies to support effective learning. It must seek knowledge and then share the same with course designers and policy makers so that they are in a position to act on the basis of solid research evidence:

a. At BOU culture-friendly learning theory and cognition are to be employed to design appropriate instructional strategies for each and every programme.

b. More learner-focused approaches to open and distance education are needed. It has to be remembered that as we experience a fast move towards ever-greater use of information and communication technologies for communications and learning experiences for

students an open university must try to cater for sorts of target groups: marginalized as well as affluent, rural and urban, women, minorities etc.

c. There will also be need for creating a generic decision-making framework for all education programmes at BOU, from which a specific programme may make some deviation or make some necessary modifications.

Recommendation# 15- Partnership with BTV, Bangladesh Betar.

BOU must establish a long-standing and very public partnership with BTV and Bangladesh Betar, which can help in the adoption of new broadcast and online technologies.

Recommendaton #16- Deploying Leading-Edge Learning Management Tools for Learner Support.

BOU should try to acquire the capacity to create virtual learning environments which are pedagogically sound, supportive of the learning process, and can be used to support less experienced learners. It should encourage its faculty to gather knowledge and skills to make PDF and word formats of its standard print texts. CD-ROM and DVD materials are to be available to the interested learners for course enrichment. Standard course materials should be re-versioned for web usage. School of Education along with all other faculties should think about facilitating a support process for encouraging the creation of learning communities and simulate an appetite for further study.

Recommendation #17- Enhancing International Research-based Knowledge about Modern Pedagogies for Teacher Education in general and Science Teaching in particular.

It inspires the researcher to say that an appropriate model for technology selection and application will be needed at BOU.

In future the decision-making phase of any new program at BOU should include consideration on technology systems for teaching and learning where apart from human, economic and organizational factors bureaucratic stay-back mentality of the executives should be given due consideration and this should be remembered by the faculty members. The decision makers should have clear indication as how to give practitioners ideas to deal with rapid technological change as well to have clear vision as to how to structure and organize teaching and learning in the future.

It needs to be remembered that disadvantaged groups, who, due to the continuous introduction of new ICT products and services may face further exclusion from a wide range of societal activities.

Recommendation #18- Suggestion for Further Research.

As this study shows, the integration of technology into the learning context is a multifaceted web of interrelated factors, both human and systemic. It is obvious from the number of systems, processes and procedures that have been studied and those that are proposed as recommendations of this research, that there is a clear challenge in effectively managing and evidencing the progress and development of technology integration across each dimension. Hence, it is suggested that further research in the form of programme evaluation be established for the integration of educational systems in general and distance teacher education in particular.

The very last recommendation based on the just formulated Grounded Theory is –

It is necessary for active researchers of BOU to conduct research work in all related fields of distance education.

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APPENDIX 1

COLLECTED OPEN CODED DATA FOR FORMATIVE EVALUATION OF BIDE

Evaluation Report, 1986 -

Objective- The major objective of this study is to evaluate the performance of BIDE project, particularly in respect of programme activities in the light of objectives and targets set for the project. Ideally such a study would have warranted an extensive field investigation necessitating sizable manpower and funds. However, because of these constraints of manpower and funds the committee has decided to base the study on the existing documentary evidence in the field. The data available are, in the opinion of the committee, sufficient to draw conclusions and make useful recommendations. (page- 4)

Methodology-The best form of evaluation for the current purpose would be a combination of the two techniques, putting a much greater emphasis upon assessment of the process variables because of the fact that all outcomes of the project cannot be entirely represented by products identifiable in physical terms.

1. Importance of microteaching in the case of distance education-based teacher training started to show first in the Second Five Year Plan:

   > In view of introduction of new curricula in schools, there is need for introduction of educational technology in the form of TV sets, video –tapes, cassettes, projectors and non-projected audio-Visual teaching aids in order to improve the quality of education in general through application of distance teaching and teacher education in particular through microteaching and interaction analysis.

2. The Project Proforma of BIDE (1984):
   ii) A new concept of teachers' training (like microteaching) will emerge in the teacher education programme in the country.

3. The Project Proforma of BIDE submitted in 1986 quoted the Second Five Year Plan thus- Mastering of usability of video cassettes of microteaching:
   In the Second Five Year Plan, on the other hand , in view of the introduction of new curricula, application of educational technology was considered urgently needed for improving the quality of education in general through distance teaching and teacher education in particular through microteaching and interaction analysis.(BIDE-PP, 1986).

APPENDIX 2

SECOND FIVE YEAR PLAN (1980-85)

Chapter XVI: Education and Culture

16.14. A critical appraisal of progress reveals a wide gap between the plan targets and actual performance. This was due to marked departure from the programmes envisaged in the Plan. Development followed the pattern of marginal expansion in the traditional lines. The pressure group, having access to the authority, had considerably larger share of allocation than was actually due. As a result, the fruits of development did not reach the doors of those who actually need it most. In short, educational development could not bring about equality of educational opportunity as was envisaged.

Highlights of the programme-

viii. Mass media will be used to overcome shortage of good teaches, books and equipment.

Financial Allocation earmarked for –

11. Educational Technology: New programmes (total allocation of Taka three crore)

i) radio,

ii) television,

iii) other media including instructional materials

Educational Technology

16.88- Educational technology refers to the media that can be used for instructional and learning purposes along with conventional teacher, text book and the black board. Generally, radio, TV, film, cassettes, posters, charts and even computers are included under the concept.

APPENDIX 3

1993- Evaluation of Distance Education Facility in Bangladesh

:

"Distance Education in Asia and the Pacific Country Papers"

A Study Conducted by the Institute of Multimedia Education, Japan and Unesco, 1993 (excerpt only)-

It is written in the Note by the Secretariat that-

> the collection of country papers on Distance Education in the Asia and Pacific region is a detailed and wide-ranging study which confirms the wealth of resources available in this specific geographical area.

The starting of distance education in Bangladesh is brought up in this way-

> The policy proposals and statement contained in the planning documents were possibly the immediate sources of inspiration for undertaking the BEd distance education programme. Distance teaching activity was established in the year 1985 when the first batch of students were registered under the programme.
>
> Reading and listening materials for distance education- subject-wise modular text books and audio cassettes- were developed and distributed among students at the time of registration for each semester.

A weekly radio programme of thirty minutes and a fortnightly television program of twenty-six minutes were broadcast for discussion of selected topics and student queries"

The BEd distance education programme was introduced as an experimental program to be contained within the regular budget of BIDE. In 1985-86 fiscal year the DG of Secondary and Higher Education, with the approval of the Ministry of Education (MOE) gave an amount of Taka 10lakh to BIDE for meeting initial costs of the distance education programme. In the following year a sum of Taka 40 lakh was given to BIDE from the same source, for the same purpose. Besides, BIDE received a total of 24 lakh as grant from the four Boards of Intermediate and Secondary Education and the National Curriculum and

textbook Board for facilitating the management of distance education. These grants were also approved by the MOE.

According the Third Five Year Plan (TFYP), 1985-90, telecommunication facilities in the country are inadequate.

"There are nine radio stations/sub-stations and ten television stations/relay stations in the country. The entire country is covered by radio and television."

"There is no stated communication policy for education or distance education."

"Planning documents have proposed, however, to introduce correspondence courses with extensive use of radio and television to spread primary and mass education. Leaders of the government often reiterate this policy in their public statements. Newspapers carry news, views and occasional lead stories critical of government policies and measures on education.

"Radio and television have regular education programmes."

"An Audio-Visual Education Centre (AVEC) was established by the government within the premises of the Dhaka Teachers' Training College in 1962 with the objectives of teaching through films, and supplying educational equipment and aids to the schools."

"A separate programme, known as the School Broadcast Programme (SBP), was introduced in 1980 with Japanese funding assistance. Under this SBP, audio control console sets were distributed to 1070 secondary schools for monitoring curriculum based educational broadcasts over national radio."

"However, prior to introduction of the new SBP, a similar school broadcast programme was already in existence."

"It needs to be mentioned that BIDE's staff salary and maintenance cost are borne by the government from its revenue budget."

"BIDE has a limited staff, limited physical facilities and budgetary constraint. In the absence of a firm government decision for the continuation of the distance education programme distance education programme has to be suspended effective in 1988. There is no dearth interest in the program. Queries in person, over the telephone and by post regarding the possibility of restarting the program pour into BIDE's office almost daily. Attempts are afoot to reopen the programme. Currently a feasibility study for a prospective Open University is

nearing completion. It will not be surprising if the government decides to start an Open University by restarting registration for the BEd distance education programme."

The Legal Status of Distance Education-

"In the Second Five Year Plan (SFYP), 1980-85, it was proposed that, "correspondence and evening courses will be introduced for training of primary and secondary teachers; radio and TV will also be used."

"TFYP, 1985-90 proposals included- audio-visual aids, viz. charts, posters, globes, maps, etc., will be supplied to primary and secondary schools under the BIDE project. TV sets, video tapes, cassettes, tape recorders, films, slides, film projectors, slide projectors will be supplied to TTCs, NIEAER and NAPE under the BIDE project., and correspondence courses in secondary teachers training will be experimented under a pilot project."

"Innovations like the distance education programmes in Australia, the off-campus distance education of Malaysia, the Open University of Thailand were envisaged for higher education of the country in the TFYP."

"In this context it was proposed that: Multi-media approach through the use of educational technology will be introduced. Distance education, extensive use of radio, television, video cassettes, newsletters, etc., will be introduced.

Provision should be made for the publication of up-to-date textbooks, newsletters and resource materials to help life-long professional growth of teachers and teacher educators.

Correspondence and evening courses will be introduced at the teacher training institutions for in-service professional development of primary and secondary school teachers."

"The BEd distance education programme was introduced with the approval of the president of the country in June 1985. No law was passed or government executive order issued to give distance education a legal footing."

"BIDE is a non-teaching institution. It is more like a service department of the MOE which administers the BEd distance education programme."

"A bulletin published quarterly, is sent to every student regularly by post."

"No research activity on the distance education programme was ever undertaken."

"BIDE was established neither as an exclusive distance teaching or teacher training institution. It didn't have a core staff of academics proficient in teacher training and related research techniques. This limitation compelled BIDE to depend greatly upon the staff of the regional centres. The centres also made compromises with the limitations of BIDE. Had it not been so, the distance education program could have proved itself more efficient and effective."

"Organisation and management of teaching practice was weak and the time for supervised teaching practice was short. Students did not regularly attend the regional centres whilst some students and tutors did not take the task as was expected.

Microteaching, if practiced at all, was no more than a make-believe game. Obviously, this very important aspect of the teacher training programme was primarily neglected. If these lapses had been prevented, the distance education programme could have proved itself quite efficient and effective."

"The major factors hindering implementation of the distance education programme may be summarized as lack of a firm government decision to implement the programme; absence of a law/government executive order that could give the distance education programme a stable footing; change of government and top echelon of planners/administrators/executives; lack of adequate financial/material support to the programme, and resistance , mostly psychological, from the orthodox old-timers who show reluctance to any change."

"Even during its life time of three years the key planners and the top executives did not support the programme and move for a law or an executive government order."
"One criticism is that the advocates of distance education were a little impatient to introduce the programme and thus overlooked this vital requirement to the detriment of the programme.

APPENDIX 4

PROJECT PERFORMANCE AUDIT REPORT ON THE BANGLADESH OPEN UNIVERSITY PROJECT

(Loan 1173-BAN[SF]) IN BANGLADESH, 2002-

In response to inadequate access to formal basic education and career-development training in rural Bangladesh, one of the Government's education priorities set out in the Fourth Five-Year Plan (1990–1995) was to provide education opportunities to out-of-school people through non-formal channels and continuing education. In line with this priority, the Government requested the Asian Development Bank (ADB) to finance the Project and thereby help provide distance education to various disadvantaged groups excluded from the formal education system. A project preparatory technical assistance, granted by ADB in November 1989, was instrumental in designing the Project that was approved in August 1992.

The objectives of the Project were to

(i) increase access to basic education (mostly at the junior secondary level) and career-development training for disadvantaged groups through distance education;

(ii) improve the quality and relevance of distance education programs (through radio and television broadcasting, printed self-study textbooks, audio and video cassettes, and part-time tutorials by contracted teachers from the formal education system); and

(iii) increase general knowledge of the rural poor for improving their living conditions.

The project scope comprised (i) establishment of the Bangladesh Open University's (BOU) main campus, 10 regional resource centers, and 80 local centers; (ii) instructional materials development; (iii) staff development; and (iv) project implementation assistance and benefit.

The Project was to be implemented over 4 years and 7 months. Actual implementation

took 6 years and 1 month. The 18-months delay was attributable to the time spent conducting a needs assessment survey prior to implementation, which was not envisaged at appraisal, and to delays in civil works and staff recruitment. The delays in civil works were caused by

litigation for land acquisition, seasonal monsoons, and floods; and in staff recruitment by the lengthy recruitment procedure and the large number of staff to be recruited.

The Project has been consistent both with the Government's education priorities, which

continue to focus on providing education opportunities to out-of-school people, and with ADB's education strategy at project formulation, which focused on technical/vocational and higher education. The Project is also consistent with ADB's current education strategy, which has shifted the focus to basic education (primary, junior secondary, and non-formal education), as it uses non-formal distance delivery mode to provide secondary education and career development training (especially teacher training for primary and secondary schools) to the disadvantaged education (42% of BOU's current enrollment is in the Secondary School Certificate program); improving the quality and relevance of distance education programs; and increasing general knowledge of the rural poor. Thus, the overall goal of providing distance learning opportunities to various disadvantaged groups has been met. The Project is rated successful.

Three key issues emerge from the evaluation-

First, BOU should try to increase the utilization of its media center by exploring possibilities to broadcast its programs directly from the media center, rather than sharing the existing radio and television channels.

Second, BOU should try to improve its management capacity by providing its management staff with relevant training to increase efficiency in the distance education delivery of its programs.

Third, although the Ministry of Education has recently granted recognition of BOU's Secondary School Certificate program, BOU still needs to get recognition for its remaining programs.

APPENDIX 5

Report on TQI M-learning project- ADB RETA

-A Study on Technology in Education to reduce Poverty;

Project-Asia Pacific, 2007

Description-

RETA is a project to investigate the innovative uses of technology in education, involving four countries in the region: Bangladesh, Nepal, Mongolia and Samoa.

It was concluded that a pilot project involving the application of mobile phone technology to support delivery of the TQI Continuing Professional Development programmes in Bangla and Math would be undertaken in the Patuakhali district.

(Research Evaluation-

it was mentioned in the following way in Component 3 of TQI-SEP/BOU- PP 2004-

..... The component will identify the remote and underserved areas on which to focus provision of mobile facilities and outreach services to disadvantaged areas."

Though component 3 was to implemented collaboarticely with BOU they were never informed of this work.)

The main TQI objectives were to determine:

If m-learning is an effective mode for teacher training and improvement in classroom practice,

If m-learning is a suitable modality to reach rural and remote teachers.

M-Learning in Bangladesh

4.1 At present, there is no effective way of reaching remote teachers for this purpose except to have them come to the TTCs for residential training.

4.3 In the m-learning in Bangladesh project a blended approach to providing Continuing Professional Development (CPD) distance learning was adopted. A combination of print-

based distance learning materials, a f-2-f orientation and training workshop, audio-conferencing sessions, SMS text messaging, sharing of video and photos, in-school group discussion activities were all incorporated into the overall design of the training programme.

7.14 Identification of an instructional design resource person to facilitate writer's workshop to revise training materials into a distance delivery format.

8.1.2 Choice of technology- Implications

Findings during the mid-term monitoring visit and results of the final evaluation indicate that the trainees found the phone to be complicated, cumbersome and not user-friendly. Many of the features were not operational most notably the use of audio-conferencing and sending of video clips. This required a change in instructional strategies early in the project which impacted on the level of interactivity and monitoring of classroom activities.

8.1.3 Translation

It was requested that the learning materials, prepared in distance learning format, be translated and reviewed by all members of the TQI team to ensure quality. However, the RTI group did not arrange for translation until after the training was completed.

8.1.6. Human Resources

The absence from Bangladesh on numerous occasions of one of the local consultants was problematic.

Implications:

In future collaborative projects a understanding of roles and responsibilities should be constructed.

10.5

Teachers were able to develop their skills. Individual thinking skills and analytical skills of teachers were developed. Exchange of ideas was very useful. This mode has forced teachers to prepare themselves and as a result they have become more active.

10.6

The majority of participants indicated that they would be willing to participate in future technology supported training opportunities.

10.8.3

More attention needed to be paid to orientation to the distance learning CPD rogramme and to training in the use of the technology.

Females generally were shy of the technology.

10.8.7 *Complexity of downloading video from mobile phone to lap-top requires additional software and training.*

APPENDIX 7

Capacity Assessment Study Report

on Bangladesh Open University conducted by TQI-SEP distance education Advisers, July, 2006-

(page 12) *–B. Planning, management and administration-*

4. ICT Policy

The anticipated increased use of information and communication technologies for the provision of distance education at BOU needs to be carefully planned to ensure that any initiative in this area is relevant, affordable , practical and learner-centred.

Recommendation:

4.1 That BOU develop an ICT policy based on solid information and research results and that an incremental implementation plan be prepared.

5. Learner centred attitudes and behaviours

Recommendations:

5.1 That all staff should be trained in 'customer' service and handling of student inquiries, problems and complaints.

5.2 That more opportunities be created for faculty and staff to interact with BOU students especially outside of Dhaka.

5.3 that all Regional Offices and Co-ordinating Offices be designed to be user-friendly and welcoming to learners through such things as improved signboards, study areas, teaching aids, additional learning resources and others.

C. Programme planning, instructional design and development.

1.Instructional Design for new BEd

The instructional design process is critical and through this approach careful planning of all aspects result in improved learning. It is a process that requires

participation and dedicated time from faculty and staff from a number of areas of the university.

Recommendations:

-That course teams for each subject be established including faculty members and representatives from other areas including media and printing and publishing divisions, to develop course blueprints.

-That a series of design and development training workshops be convened at the earliest opportunity and that an international expert in instructional design be contracted to facilitate the workshops. And further that no writing of materials proceed until this training commences.

-That the draft "Instructional Design Manual", produced in 1998, by Chris Yates be revised, printed and distributed.

5. Teaching Practice

This area was mentioned on several occasions by headmasters and tutors, as an area of weakness in the current BEd. As it is anticipated that the majority of learners will be serving as classroom teachers during their term of study it may be possible to take advantage of this opportunity to incorporate additional teaching practice time and supervision within their own school setting or in nearby schools.

Recommendation:

- That the working group considers various options to improve the quality and quantity of teaching practice. Some ideas are : to have simulation teaching take place during school breaks in a residential situation; increasing the role of head teachers in monitoring and supervision of classroom teaching; that BOU tutors/ TTC trainers have a greater role in managing and monitoring teaching practice.

D. Learning Services

Learning services are those aspects of open and distance learning that guide and support the learners from the point of first contact with institution until their final completion. Within the BOU context these aspects reside within the roles and responsibilities of a number of divisions and Schools.

1. Tutors and tutorial centres

Recommendations:

-That all SoE tutors receive orientation to open and distance learning and training in their roles and responsibilities as facilitators of learning as opposed to lecturers, prior to the commencement of the new BEd.

-That improved communication strategies between BOU and tutorial centres be implemented including regular meetings to receive feedback, exchange of information and ideas, identify problems. These meetings should include representatives from various Divisions and the SoE.

-Tutorial centres should be provided with appropriate teaching aids to assist in more activity based and participatory learning. These should include at minimum overhead projectors, white boards, television monitor and VCR/DVD players.

-Agreements should be made between BOU and TTCs for the sharing of library facilities, computer labs, resource centres etc, and that this should be facilitated by TQI-SEP before the first intake.

2. Learners

.....They are the clients and commit their time and limited financial resources to ensure a quality education.... Open and distance learners are unique; they have special characteristics, needs and demands which must be adequately taken into consideration.

Recommandations:

2.1 That all communication tools aimed at students be reviewed in terms of content, language, lay-out, format, style with a view to making them more user-friendly.

E. Production and distribution

1. Media and material production

- the extra capacity that exists in the Media Centre and that it is well equipped with trained production staff that is under-utilised.

The study team asked learners their opinions regarding the media programmes and three common responses emerged: the broadcast time is not convenient, there are too many repetitions and the programmes do not relate to their subject content.

The recent initiative by BOU to link media production to qualifications for promotions is a welcome step to encourage faculty participation but this must be done without compromising the quality of productions.

Recommendations:

-That a media viewer//listener study be conducted to ascertain patterns, frequency, accessibility, feedback and satisfaction by BOU-SoE students.

-That the Media Division, in consultation with other Divisions and Schools, develop media production standards with a view to establishing consistent quality of production and clearly articulate roles and responsibilities in the process.

-That in the interim period of gaining approval for a dedicated educational channel that discussions take place with BTV regarding increased broadcast time and improved scheduling.

That the SoE, during the course planning process, invite full participation by production staff, to ensure media approaches and treatments, are best integrated into the curriculum and used appropriately and in a timely manner for the content/subject area under consideration.

VI: Conclusions

....TQI-SEP has within its mandate, provided by GOB under the terms of the loan agreement with ADB and co-financing from CIDA, provision of support and assistance to BOU.... However, It must be noted that TQI support is dependent upon the full adoption of the national standardized curriculum by BOU. The advisers have serious concerns regarding the extent to which the BOU BEd programme conforms to the national curriculum as approved by the Government of Bangladesh.

APPENDIX 8

Check-in-questions of the ID Model

(Related to Findings onRes.Ob.5)

Check-in-questions of the ID Model
Step 1- Did the designers identify instructional goals meaning whether they included expectations about outcomes after instruction?
Step 2- Did they go through prior determination of curricular arrangements driven goals set in school environments?
Step 3- Did they analyze learners, embedding context and study context and conducting instructional analysis?
Step 4- Did they seek answer to the question- "what entry behaviors including skills, attitudes and knowledge are required of students to begin the instruction?
Step 5- Was the development of assessment instruments based on the objectives?
Step 6- Was there any step to determine the mode of learner participation (group or individual)?
Step 7-Were assessment and other related activities prepared by considering learning theories and educational research findings?

APPENDIX 9

Chronological advancement of design-delivery stages

based on Policy guideline (on technology-aided education components)-

1948	Use of radio, film, film projectors: AVEC
1957	"Teaching through Film" : AVEC
1962	Proforma for development project: Supplementary scheme for the expansion of activities of Audio-Visual Education Centre, October, 1962: AVEC
1964-66	Starting of radio broadcast in collaboration with Radio Pakistan: AVEC
1974	Starting of Open education thought
1979	Interim Education Policy- Recommendations of the National Advisory Council of Education: Use of communication media in education (ch. 10)
1980-85	SFYP guides the use of Radio-TV, and production of video on microteaching.
1981-86	The Project Proforma for BIDE was modified three times: • Prepared in November, 1982 (the date of commencement is written as January, 1981) • Recast in November, 1984 • Approved in PEC meeting on 8 January, 1986 (effective July, 1984)
1985-90	TAPP- for procurement of audio-visual equipments on BIDE, March, 1987.
1984	Proposal for the establishment of BOU, outcome of the seminar on media & distance education held on April, 1984 by a committee formed by the Ministry of Education to meet the need for tertiary and non-formal education.
1985	TA prepared for the proposed Open School Project, March, 1985

1992	Project Proforma: Scheme for establishment of Bangladesh Open University Project(1991-97), May, 1992
2003-2009	At a meeting titled "Training untrained teachers through BOU" on 2April, 2003 the Education Secretary pronounced that the recommendations made through an Action Plan will help in the formulation of Education Policy by mid April, 2003. The Secretary observed that the consultants did not appreciate the difficulties that were faced in policy making in education within a democratic framework. When donors put pressure on Ministers and senior officials, however, decisions were sometimes made (Record of meeting-27, p.5).

APPENDIX 10

Questionnaires to measure

Learners' perception about "*Learner Space*"

for the current BEd (collaborative) about tutorials session, course book, etc

1= Very important, 2= important, 3= neither important nor unimportant, 4= unimportant, 5= Totally unimportant

In case of questions put the best of your answers, in case of comments put the best of yours.

Statements/Questions/Comments	1	2	3	4	5
S1 – My interaction with my tutors is facilitated through a variety of ways.					
S2 - My interaction with other learners is facilitated through a variety of ways.					
S3 - I am provided with basic information in a befitting manner.					
S4 – Learning outcomes for each unit are summarized in a clearly written, straightforward statement.					
S5– My courses are separated into self-contained units that can be used to assess my mastery before moving forward in the course.					
S6 - Each unit and lesson require me to engage in analysis, synthesis, and evaluation as part of the course assignments.					
S7 – Contact information and tools are provided to encourage students to work with each other and the tutor					
S8- The school subject based courses are designed to require students to work in groups using problem-solving activities in order to develop topic understanding.					
S9 - Course materials promote collaboration among students.					
S10- Sufficient library resources are available to me.					

S11-Feedback is provided to me in a manner that is constructive and non-threatening.					
S12 - I am able to take help through the radio/TV lessons aired regularly.					
S13-Written information is supplied to me about the radio/TV programmes.					
S14 - I have been instructed in the proper methods of school practice sessions.					
S15 - Easily accessible technical assistance is available to me throughout the duration of the programme.					
S16 – An effective system is in place to address my questions about the programme.					
S17- Feedback about my result is provided in a timely manner.					

APPENDIX 11

Questionnaire Survey on LAN

Bangladesh Open University

Gazipur-1705

Subject: Usability of computer networking at BOU.

Target group: Students of BEd at Comilla Tutorial Centre

Date: 14 Nov., 1997.

A. Personal Information
Session:

Semester :

Male/Female Teacher/Non-Teacher

B. Opinion on Computer Networking at BOU:
1. Are you aware that BOU has established Computer Networking at RRC's ? Y/N.
2. Did you hear anything about-
(Encircle the correct word Y or N in each of the boxes for your answers)

Internet	Y/N
Audio-conferencing	Y/N
Video-conferencing	Y/N

3. Are you aware of the advantage of the following types of interactions in distance education system?
   Learner-Printed knowledge based information Y/N

   Learner-Subject expert Y/N

   Learner-Learner Y/N

4. Have you any knowledge on "SATELLITE-BASED EDUCATION"? Y/N

5. Did you have any knowledge about Virtual Classroom? Y/N

6. If answer to Q.N. 5 is Y then please specify 9in a few sentences):

.....

.....

.....

.....

7. Are you aware of the purpose of assignments in distance education? Y/N

8. Do you think the assignments are serving the purpose? Y/N

9.Which one is more effective: TMA system of CIM/ of BEd

10. Can you think of any better way to introduce assignments? Please elaborate:

11. Do you know that computer networking is used in developed countries in education? Y/N.

12. Do you think computer networking system can be made available to all learners in future? Y/N

13. Do you know which faculty offers the programme BEd?

APPENDIX 12

Open Data Coding units preliminarily done to generate SCD

APPENDIX 15

Open Data Coding **units preliminarily done to generate SCD**

Units	Type of Recommendation/Design/Delivery/LS/LE
4.3.1.R1	**Reco.1948**: On educational broadcast with projectors, films, radio, TV lessons
4.3.1.R2	**Reco.1957**: On introduction of correspondence courses
4.3.1.R3	**Form.2002:** of (draft) ICT policies, ICT Task Force
4.3.1.R4	**Reco.1970**: on introduction of modern educational technologies such as programmed learning, teaching of math, science.
4.3.1.R5	**Reco.1980:** on microteaching in the SFYP
4.3.1.R.6& **4.3.1.R7**	**Reco.1969:** on Institute of Educational Radio and Television (10.4.; 1979); second channel of radio, TV, **Reco.1979:** on operation of learners' centre and organization of follow-up of learners' discussion session on radio-TV lessons.
4.3.1.R8	**Reco.1974**: on the formation of an Open University.
4.3.1.R9	**Constr.1992** of a Media Centre for BOU.
4.3.1.R10	**Intro.** Instructional Design

4.3.1.R11	**Reco.** Direct transmission from Gazipur
4.3.1.R12	**Reco**. Conduction of research
4.3.1.R13	Introduction to Audio-conferencing facility for learners through RRCs
4.3.1.R14	Emphasis on practice teaching
4.3.1.R15	**Reco.** TQI-SEP-BOU
4.3.1.D	**Design stages related to these recommendations:** 4.3.1.D1. Production of educational films, 4.3.1.D2. Production of radio lesson 4.3.1.D3. Construction of film libraries, identification of centres for the show of educational film, 4.3.1.D4. Opening of an Institute of Educational Radio and Television Opening of open university , 4.3.1.D5. Introduction of modern educational technologies **Delivery stages of all/part of these recommendations:** 4.3.1.D6. Procurement and use of film projectors, 4.3.1.D7. Procurement of and allocation of mobile vans for countrywide exhibition of educational films to the designated target groups, 4.3.1.D8. Functioning of the of radio-TV lessons component, 4.3.1.D9. Production and use of "microteaching" video-cassettes,

	4.3.1.D10. Interaction sessions at mahakuma level on radio-TV lessons, 4.3.1.D11 Formation of open university and its academic activity . 4.3.1.D12 National BEd
4.3.1.LS&LE	Suggestions on *creation and use of learner space and learning environment* in design-delivery stages.
4.3.1.RES	Research Evaluation

APPENDIX 13

LIST OF FOCUS GROUP DISCUSSION & TELEPHONICSESSIONS

1. One Focus Group Discussionwas was held on 23.05.07 with technical officers and office staff of SBP revealed that peer group/ teacher-student discussion was at times encouraged by the teachers after the radio lesson.

2. A FGD was held on 21.09.07with the technical officers of SBP on collaboration of AVEC with FDC .They said that some work related to video cassette production was transferred to FDC. But they couldn't provide any detail on it.

3 An FGD talk was held with technical officers of the project SBP on 12.06.08 on LS' in the Radio Programmes of Bangladesh Period.

4 Telephonic interviews were held on 03.11.10 and 04.11.10 with one retired teacher-trainer of Dhaka TTC on video instruments given by BIDE to TTCs.