

Obstacles & Possibilities to Integrate ICT-Based Primary, Secondary, Higher Secondary level Education System in Bangladesh

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Abstract

Information and Communication Technology (ICT) is considered as the most effective constituent for the development of a nation. Bangladesh is striving to create an environment for rapid dissemination of ICT at all corners of the society. Over the last few decades, ICT has been used in changing the traditional education system. It has helped to improve the quality of education and the overall teaching-learning process. Unfortunately, many teachers still do not use ICT effectively; or, even if they use ICT, it is not integrated into their pedagogy in a meaningful way. In most developing countries, including Bangladesh, integrating ICT in education is thwarted by many factors, and the success of ICT implementation is dependent on addressing all of these co-related barriers. Identification of these problem areas can help in improving teacher training and policy-making. This article identifies barriers that are affecting the proper implementation of ICT in the Bangladesh education system. It intends to investigate the application of ICT at the tertiary level and the attitudes of teachers and students towards using ICT on educational grounds at this level. This study tries to provide decision makers, planners, and practitioners with a summary of what is known about the potential and conditions of effective use of ICT based education and learning by drawing on knowledge, research, and experience. Moreover, in view of this study evaluation of ICT intervention and subsequent adjustments and follow-up actions Technologies have great potential for knowledge dissemination and effective learning services.

Background – The scenario of IT development in Bangladeshi education system

Bangladesh is struggling to make its people educated and well skilled to meet the competition of the global village. The use of information and communication technologies in the education system in accordance with other countries, make it modern and work-oriented. The present ruling government has already been worked vastly in every wings of education in the mood of ICT oriented and patterns, such as, Multimedia classroom have been started in 4,500 primary schools and 33000 secondary, higher secondary and higher level institutions, 21,00,000 teachers are engaged with this system and 7.5 million students are getting better classroom performance of teaching-learning techniques. About 20,000 computer labs have been set up, 1,700 computers have already been supplied to the institutions and many teachers have been given foreign training on ICT. ICT Training and Resource Center in 125 upazilas has been established, from this ICT Center 37000 teachers have been given ICT training in the year 2017-18, computer lab have been set up in 3,544 educational institutions since 2009, computer education has been compulsory for secondary and higher secondary/equivalent level, to encourage education and information technology 17 ICT mobile van launched, 19 Digital Language Laboratories have been set up and from it training programs have been started, Computer Aided Learning (CAL) program is being operated in 50 schools. Teachers were provided training in English, Mathematics and Science. CDs containing interactive animated materials on these subjects for different grades, computer and multimedia projector were provided to the project schools. 57,338 teachers have been provided training in making digital content based class with multimedia Computer Lab has been set up in 100 institutions of the Dhaka city through the project of KOICA program aims to continue the computer training program for the teachers.

The implementation of online survey by BANBEIS at national level, the recruitment activities of NTRCA, communication and admission process in educational institutions, publication of results of various examinations, monitoring of board results, registration, and application of PSC examination, Teachers and Staff's monthly pay order (MPO), e-tender etc. has been digitized. Private education institute teacher's staff Trusts and another related activities like Pension now finalized through online system, Attempts to upload textbooks of NCTB which is called e-books and upload to websites on the convenience of students, Access to Information (a2i) and British Council have jointly organized a teacher's window for digital content sharing, with the help of information and communication technology, 1500 Computer Labs have been set up in non-government colleges, steps have been taken to complete all activities of Directorate of Inspection and Audits (DIA) through the online system.

The BANBEIS library has adopted automation pattern, using Open Educational Resource and Network as a learning platform for students, muktupath and BdREN is being used. Under the Secondary Education Sector Investment Program (SESIP), ICT Learning Center (ILC) has been set up in 640 secondary and higher secondary level educational institutions across the country.

Teaching-learning System, Pedagogical Techniques have been digitized through ICT learning Center. Apart from this, education information in mobile apps, online foreign education processing, interactive database, result archive database, digital library, establishment of "Sheikh Russell Digital Lab" in the education institutes, dynamic website in education institutes, MIS in Primary, Secondary & Higher Secondary education, Web TV and Radio of Bangladesh Open University (BOU), Road Accident Control System, online bill payment, provided scholarships with mobile banking, E-Monitoring system, E-paper clipping, Digital Multimedia Center(DMC), Digital/Smart Attendance System, Online Networking System (URL) of all Education Boards, Education GIS (School Mapping), Interactive digital madrasa text book, e-tender system, online higher studies etc. are at present being completed with respect to content of ICT pattern.

It is welcome that the government is putting emphasis on promoting technical and vocational education in the country. Recently, it has taken up a TK 1534cr project for technical schools and colleges all across the country for developing skilled and efficient human resource.

Foundation - The Obstacles to integrate ICT in education system

Bangladesh is an over populated and developing country of South Asia. The development of ICT sector of this country is really matter of thinking now a day. So, no far away those sweet days will come and Bangladesh will prove itself and fulfill world's demand in ICT sector in right time by the right direction with a meaningful ICT Plan as well as Primary, Secondary, Higher Secondary level Education for Bangladesh gone through with proper logistic support and handsome financial guarantee. In Bangladesh ICT adoption is though very late but its success rate of this sector is proportionally very meaningful comparatively with others. This development part has been contributed by both public and private sectors, though little complexity is found in the beginning of public sector due to some government administrative problems and plan, guidance, investment and logistic support from the ICT department. But it's a matter of joy being a part of this meaningful dissertation that present government declared this department as a separated ministry with some policy and plan where its vision is very wise full and prospective. In this moment regarding ICT Plan to meet the country's demand if we establish a meaningful Plan for primary, secondary, higher secondary education study as well as training towards ICT sector hopefully it will be a major contribution for the county even though for the world and nation.

Generally following problems are found at a glance -

1. Lack of Monitoring Students & teachers Attendance
2. Manual Examination Processing
3. Weak Class Management
4. Corruption in fee collection or financial Report
5. Delay of Salary Payment
6. Lack of Guardian participation
7. Lack of teacher's training
8. Unavailable of standard digital contents
9. Human dissatisfaction in institute
10. Less interest to improve teaching quality
11. Lack of available books in Library
12. Political interference in institute management
13. Less Budget for Education sector

Objective – The new approach to overcome the obstacles

The new approach to overcome the obstacles will be conducted to full fill the current demand of the country regarding policy establishment and plan for primary, secondary, higher secondary education. A significant investigation on present situation and upcoming plan which has to be implemented near future on the basis of the demand; problems or limitation on present/past goes situation, possible upcoming guidelines, and some other aspects of ICT in Bangladesh. The main objective to analyze the system and give possible solution:

1. To analyze past situation gone through of ICT-less education system in Bangladesh
2. To analyze present situation goes through of ICT-based education in Bangladesh
3. To analyze Government present policy of ICT in Bangladesh.
4. To analyze Government present policy of ICT for education system
5. To identify the present constraints faced by ICT sector regarding primary-secondary education
6. To suggest remedial measures to overcome these constraints
7. Students/Trainers effects, satisfaction & dissatisfaction
8. To define employee market availability
9. For employee expectations from the employers in both public & private organization
10. To define employer expectations from the employee in public & private sectors

Scope – The possibilities to integrate ICT in education system

The ICT Plan for Primary, Secondary, Higher Secondary level Education of Bangladesh could be carried out through a quantitative survey across some government and non-government organizations to investigate a goal of primary, secondary education in inter-relationship between home and abroad. The result shows strong correlation amongst them, which further suggests that ICT skill; one of the components of ICT knowledge is potentially a strong factor to change the typical attitude and mindset towards ICT in the context of present demand. The findings have important implications in practice as well as research, which are expected to contribute in future direction of research and also in the effort to solve the complex puzzle of ICT adoption in developing country context. ICT integration in education system of Bangladesh will be studied in this research work though there may be comparison, similarity, dissimilarity with others countries like Malaysia, Singapore and India etc. Everywhere in a given country ICT is a must, especially for Primary,

Secondary, Higher Secondary level education. For a constructive research in all stages of education, I selected ICT as a good topic which is very important for modern technological education.

Following techniques and system can be taken to start the ICT integration in education System-

1. Wireless Monitoring System
2. Students & teachers Biometrics Attendance system
3. Examination Result Process through software
4. Online or Multimedia Class Management
5. Student Fee collection using MFS or Bank channel
6. Account's Report through software
7. All Salary Payment through EFT
8. SMS service for guardian awareness
9. Document (Admit Card, Testimonials) service
10. Online Library Management

Literature Review

ICT for education is more critical today than ever before since its growing power and capabilities are triggering a change in the learning environments available for education. The use of ICT offers powerful learning environments and can transform the learning and teaching process so that students can deal with knowledge in an active, self directed and constructive way. The use of ICT could improve performance, teaching and administration, have a positive impact on education as a whole, and develop relevant skills in the disadvantaged communities – helping in liberation and transformation. The Dakar Framework for Action (World Education Forum, Dakar, Senegal, April 2000) also stressed the use of ICT for achieving 'Education For All' (EFA) goals and recommended, "ICT must be harnessed to support EFA goals at an affordable cost. These technologies have great potential for knowledge dissemination, effective learning and the development of more efficient education services.

The results showed that the teachers who are already regular users of ICT have confidence in using ICT, perceive it to be useful for their personal work and for their teaching and planning to extend their use further in the future. The factors that were found to be most important to these teachers in their teaching were: making the lessons more interesting, easier, more fun for them and their pupils, more diverse, more motivating for the pupils and more enjoyable.

Methodology

Population of the study in ICT Training as well as tuition providing institutions and students from that institution both primary and secondary data will be collected for the study purpose. Primary data will be collected through face to face comprehensive interviews with a structured questionnaire. The questionnaire will be pre-tested on a small sample. Secondary data will be collected from research articles, textbook and other published and unpublished research materials, journals on the issues. Both quota sampling and simple random sampling technique will be used for this study. After identifying the problem thorough a secondary study has been conducted to gain a comprehensive idea of the problem. Then primary qualitative research followed by a primary quantitative research has been conducted.

Primary data will be generated through:

A) Investing Bangladesh Government organizations for government laws & gazettes: Ministry of Education, Directorate of Secondary & Higher Secondary Education, Ministry of Primary & Mass Education.

- B) Interviewing resource persons who got higher education/training from those organizations.
- C) High Officials from the government of Bangladesh relating with ICT sector.
- D) Interviewing some ICT experts in different scale from home and abroad

Secondary data will be gathered through:

- A) Website Information from concern ministry of Bangladesh,
- B) Published Article,
- C) Newspaper Article
- D) Publications of tanning providing organization

Research includes scientific and inductive thinking and it promotes the development of logical habits of thinking so in negotiation of all the prospective part some are found in presently static which will be overcome in latter is called our limitation of the research. Moreover, some other limitations are pointed out here:

- A) Limited ICT Supported Infrastructure that creates difficulties to researcher to understand the application of different topic
- B) Lack of sufficient time
- C) Limited knowledge about ICT implementation
- D) Lack of sufficient fund to run the research work

Result & Discussion

After completing the research successfully, we will be able to bring out the outcome and findings which will be based on this research. The major findings of this research are stated below shortly:

- A) It enables the effective storing of information, and can offer new fast ways of communication;
- B) It enables the reduction of information quantity towards a higher quality and better structure;
- C) It can be integrated into teaching and learning strategies – and used to support relative learning theories;
- D) ICT (computers, Inter and Intranet) can be used to create new types of interactive learning media for improved quality, equity, and access in higher education;
- E) Most of the learned people (Teacher/Instructor) are not aware/skilled about ICT based education;
- F) Our educational infrastructures are not designed with ICT facilities;
- G) ICT facilities are available but out of reach due to high cost;

Recommendations

After applying all research mechanism as well as tool we will consider some opinion / arguments / recommendation for the new investors regarding **ICT Plan for Education** of Bangladesh. To spread ICT Plan for Education over the country the following recommendations are widely mentionable:

- A) Effective implementation of ICT in education requires commitment from the government of Bangladesh, administrators, teachers, parents, students, and the community.
- B) Lacks of resources within educational institutions are another major hindrance to the implementation of ICT in a developing country like Bangladesh that must be removed.
- C) The Government of Bangladesh has already taken some necessary steps to increase the enrollment of girls at school. Hence, strategies and proper policies should be formulated for encouraging women and girls with respect to the adoption of ICT.
- D) Local software companies should be encouraged to work together with teachers to produce Bangla software programs suitable for the teachers and students who don't know English.

E) Moreover, effective implementation of ICT in educational institutions of Bangladesh largely depends on teachers and principals, who require in-depth professional development in terms of knowledge and skills.

F) To implement computers in the classroom, teachers should feel confident and comfortable using computers, through the use of computers on a consistent basis for instructional activities. Teachers must understand the value of computing in education to be able to benefit their students and to support meaningful learning

Also following benefits will be achieved from the proposed system-

- Good Management for School & College in Bangladesh
- Easy control & Monitoring in education system for Government
- Online Notice & necessary information in education system
- Cost minimization for operating Institute
- Increase the quality of learning system

Concluding Remarks

The increasingly complex nature of business and government has focused attention on the use of research in solving operational problems to be more digitalized the country. Research as an aid to economic policy, has gained added importance, both the government and business. ICTs are potentially a useful tool both for managing education and teaching. Application of ICT in managing educational institutions should be encouraged, as should be used by instructors to gain access to educational materials. By teaching computer skills to youngsters, they may influence inward investment for the future society as well. This research reveals that the level of use and infrastructure of ICTs is not highly satisfactory in all forms of educational institutions to meet the current demands of ICT. But their efforts in this regards will help to build a digital society in Bangladesh in the near future as well.