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Abstract:

Over the past few decades, the world has been shifting from industry-based to knowledge-based society. Entrance of education should be the main concern of a nation. Education system should be produced and conserve. Knowledge distribution and best services of education both are equally important for a country. Developing and implementing education is important for creating a strong citizen. Every person in the country has some human rights and proper education is one of them. This realization exists among the post-independent government education policy makers of Bangladesh. Government of Bangladesh is trying to provide best education to their citizens. Education system introduced digitalization with the help of technology in the country. MoE of Bangladesh with the help of related authorities presented digitalization with the help of ICT in higher education institutes. This paper aimed to show the governance of HEIs incorporating digitization in Bangladeshi higher education system.

Key Words: Digitalization/digitization; Governance; HEIs; MOOCs; SRS; Technology; T-L, distant/remote learning.

1. Introduction

Education is the key to basic development of a country. The education system of Bangladesh faces a massive challenge in the shape of a massive population, poorly knowledgeable and largely impoverished and a lack of finances to cope with their needs. The government of Bangladesh is making an attempt to play her function since its inception. Many strategies and techniques of providing good education have been using but the system nevertheless struggles to fulfill the desires of the Bangladeshi population. As compared to global level education, the Bangladeshi education system isn't always competitive. Various challenges including the high-quality of instructors and facilities, problems built-in inside the syllabus, lack of computers and lab facility with the internet, insufficient infrastructure, lack of fund and comprehensive policy have had ruinous outcomes. Developed countries education system travel far way by using technology in learning. One of the most using technology is Information and Communication Technology (ICT) around the world now-a-days. In Bangladesh, for distance learning and e-learning, computer, internet and intranet based technologies have been using in a scattered and limited way. But the potentialities of technology in the education sector in higher education stage are multidimensional. Organizing e-learning or online schooling, embracing modern academic administration, ensuring the equal possibility of learning, expanding

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worldwide connectivity many of the educational institutions, giving education for distanced and distressed people etc. could be capable of achieve with the assist of technology. The Bangladesh education ministry (MoE) along with UGC, BdREN etc. continues to make education one of their top priorities by utilizing the application of Information Technology. They have set up some of programs and projects designed to assist the people of Bangladesh to acquire a fairly proper level of education irrespective of gender or class. It is the time to make goal analytical studies of the prevailing situation in the education zone and discover the way to properly utilize digital techniques of education. Through a sturdy education system, an extraordinarily certified generation may emerge to guide Bangladesh. Digitization can complement and add value to classroom T-L, distant learning and MOOCs.

2. Rationale of the Study

Technology helps us to bring the world to our fingerprints. By using technology higher education can open and expand our mind. Technology helps us both for teaching and learning. Today's world is fast-paced. Without technology education is incomplete in today's world. To cope up with the present digital world Bangladesh is very rapidly moving towards the digital age. Using the technology-based equipment in the classroom or online resources future generations will successfully handle the challenges or barriers in higher education.

3. Objectives of the Study

The main objective is to study the current situation of incorporating technology in higher education institutes.

The secondary objectives of this report are:

- a) Identify the scope and prospects of digitization of higher education institutes in Bangladesh.
- b) Investigate future scope of Technology Enhanced Learning (TEL) in HEIs.
- c) Explore the obstacles incorporating technology in HEIs.

4. Review of Related Literature

Learning is an aim-oriented system that gathers new learning, modifying and strengthening existing information. To accrue diverse types of information students' competencies, behaviors, values, or inclinations may additionally involve (BOU, 2018). Students still spent plenty of time paying attention to what teachers want to say. The teacher is the center of the class and this is the tradition of our educational environment. If instructors experience what he calls the content material of effective learning educational reformation will fail. Such content affirmed this reality that both teacher and student must have logical control over what occurs in the class (Sarason, 1996).

Technology will assist the instructor in growing a supportive learning environment and additionally transition from the position of facilitator to that of a learner. The teacher himself learns as well as assisting the students to learn (Ranasinghe, 2009). Students can learn, analyze information at anytime and anywhere by using latest technology. With the help of e-learning anyone can get rudder from experts, get or deliver just-in-time direction and training (Zaman, 2010). The key benefit to students is its trouble-free entrance (Mannan, 2015). To enhance distance education e-learning is extensively utilized in most of the developed nations. E-learning process consists of web-based learning, computer-based learning, digital lecture rooms and virtual collaboration, where contents are introduced via the internet, intranet or extranet, audio and video tape, satellite television and CD-ROM (Islam, 1997). Cloud computing based e-learning provides anytime, anywhere and any device learning and will be benefited by every students, faculties, administrators and research scholars in higher education

institutes (Madhumathi). Complex thinking skills will develop by using technology in education system (Ohler, 2005).

5. Background of HEIs in Bangladesh

Bangladesh is a growing country. Its financial system is in the evolution from agriculture to trade, manufacturing and service sectors. Bangladesh desires to gain the scopes offered by globalization to make a knowledge civilization. The education structure of Bangladesh is broadly separated into three tiers. These are primary, secondary and higher education (tertiary). The government of Bangladesh has a huge responsibility to fulfill the requirement of education of the country. From the beginning, after independence, the government of Bangladesh is trying to do her job. The higher education system of Bangladesh has been going through deep challenges right now. To improve the quality of education system and research Bangladesh has no adequate atmosphere and poor planning, this is one the main reason. Inadequate fund, ordinary monitoring capacity, nerveless governance and weak responsibility are also the reason behind the scene. All these drawbacks can only be removed by revealing a quality culture and ensuring excellent practices in higher education institutions (HEIs).

In Bangladesh, higher education was considered as a luxury once upon a time in a civilization of illiteracy. In that time literacy rate was low in our country. At time of the independence, in 1971, there were only 4 four universities in Bangladesh. And that universities were financed by the government. At present, there are 145 universities. Among them 42 are public university and 103 are private university (List of University- UGC). Private sectors of Bangladesh had come forward in beginning 1990 to launch universities. This situation was the straight effect of Bangladesh government's assessment to create private university act, 1992 (sai.uni-heidelberg.de). Because of that higher education sector experienced an impressive growth in private universities. Private universities are working within its boundaries in an extensive diversity of different niches and natures. Literacy rate also increasing every year in Bangladesh. According to the literacy rate of UNESCO, literacy rate among the population aged 15 years and older is 72.89%, where male is 75.7 % and female is 70.09% (UNESCO-Bangladesh- Literacy Rate 2017).

The government of Bangladesh realizes that the higher education system are not fully prepared to innovate and apply the knowledge. The government of Bangladesh (GoB) has recently created a National Strategic Plan for Higher Education for the next 20 years with the help of the Ministry of Education (MoE). The strategic plan focuses main challenges facing in this sector in Bangladesh. The plan suggested a number of strategy reforms and interventions to be implemented in three consecutive phases. The higher education strategy consists of five core values: Quality of Higher education, Loyalty of, Develop closer relations between higher education and the world of work, Encourage national and international partnership and collaboration, lastly enlighten the students with knowledge and skills, teach people with ethical values.

To setup the quality assurance process a new project has been established named Higher Education Quality Enhancement Project (HEQEP). One of two of its subcomponent is an establishment of institutional QA cell as a catalyst for the establishment of QA mechanism at HEIs. Another subcomponent is strengthening of Quality Assurance Unit (QAU) of University Grants Commission (UGC) to oversee the establishment and activities of Institutional Quality Assurance Cells (IQAC) in both public and private universities. The main objective of the project is to improve the quality and relevance of the teaching and research environment in higher education institutions through encouraging both innovation and accountability within universities and by enhancing the technical and institutional capacity of the higher education sector.

BdREN is a project of University Grants Commission (UGC) of Bangladesh under the Ministry of Education (MoE). This is under the Higher Education Quality Enhancement Project (HEQEP) which is assisted by the World Bank. The target of BdREN is to connect all educational institutes through a single network. This will connect all public and private institutes, universities, libraries, healthcare, laboratories, agricultural institutes etc. throughout the country. Core Values of BdREN are- Collaboration and Engagement, Sustainability, Integrity and Fairness, Innovation and Creativity, Excellence and the main objectives of BdREN are:

- Building and operating a high bandwidth high availability secure network.
- By the latest technology create network excellence.
- Providing cost-effective and best Applications and Services through economies of scale.
- Attracting NRB scientists, engineers and researchers working in different disciplines from all over the world.
- Fostering an innovative and stimulating work environment.

Higher Education Acceleration and Transformation (HEAT) project initiated by the World Bank. This is a project for next generation. This project focus for employment of graduates and quality of women's education. The main target of this project:

- a) To build up a good network in between higher education institutes.
- b) Improves the learning, teaching and researching.
- c) Improves the higher education management of the country.

Bangladesh National Qualification Framework (BNQF) is a long waited process of government of Bangladesh. This is one the important scheme for the higher education sector in Bangladesh. Under the HEQEP project quality assurance division is demanding to arrange National Qualification Framework of Bangladesh. Many universities of our country are trying to evaluate self-assessment process. This will be done by the Institutional quality assurance cell. Workshops have been held to finalize the process. ILO announced that Bangladesh Qualification Framework (BQF) is a route to a harmonized quality assured qualification system. To uphold in comprehensive world we require to National Qualification Framework of Bangladesh.

6. Methodology

This research report is prepared based on primary data mainly. 30 questions were developed for survey as questionnaire instrument. The respondents of the survey were students and teachers of different Universities/HEIs of Bangladesh. The questionnaire, including a cover letter, was distributed to participants. All subjects were asked to respond to the questionnaire and their responses were guaranteed confidentiality.

Total 100 respondents from different private and public universities were participated in survey. There were mixer of participants of students (77%) and teachers (23%). During survey it was tried to cover renowned institutes and good percentage of total university. Number of participants of students and teachers list from different universities given below:

Total 16 universities (public-7, private-9) representatives were participated in survey. In percentage the amount is 11% with respect to the total universities of Bangladesh. Survey covered 16.67% public universities representatives among 42 public university. And covers 8.7% private universities among 103 private university. Survey was conducted by face-to-face interviews among the students and teachers. The collected data was processed and analyzed by Microsoft excel software.

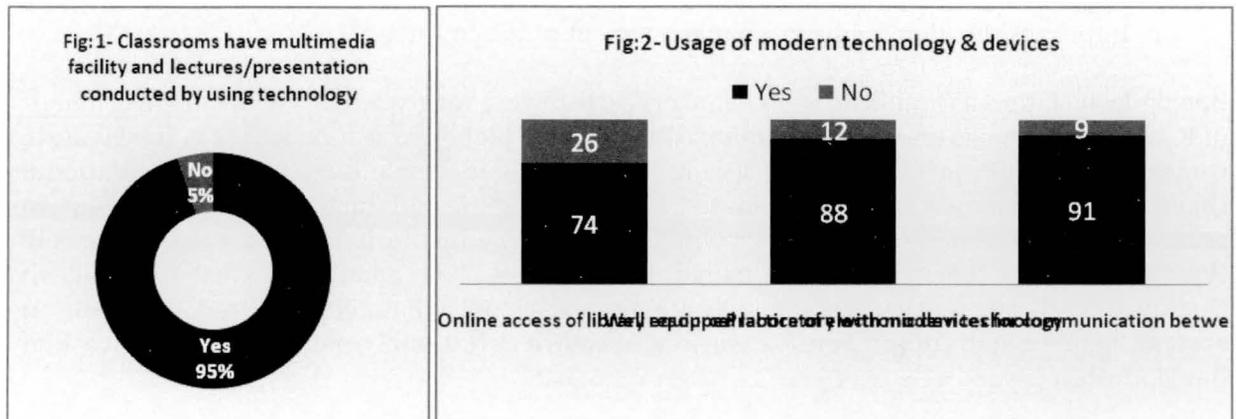
Secondary data was collected from different websites, recently published journals, books and newspapers to get a broad idea of Technology in Education. For reaching conclusions a thorough study of available material and research documents by University Grant Commission (UGC), Bangladesh Research and Education Network (BdREN) etc. was covered.

7. Analysis and Interpretation of the Data

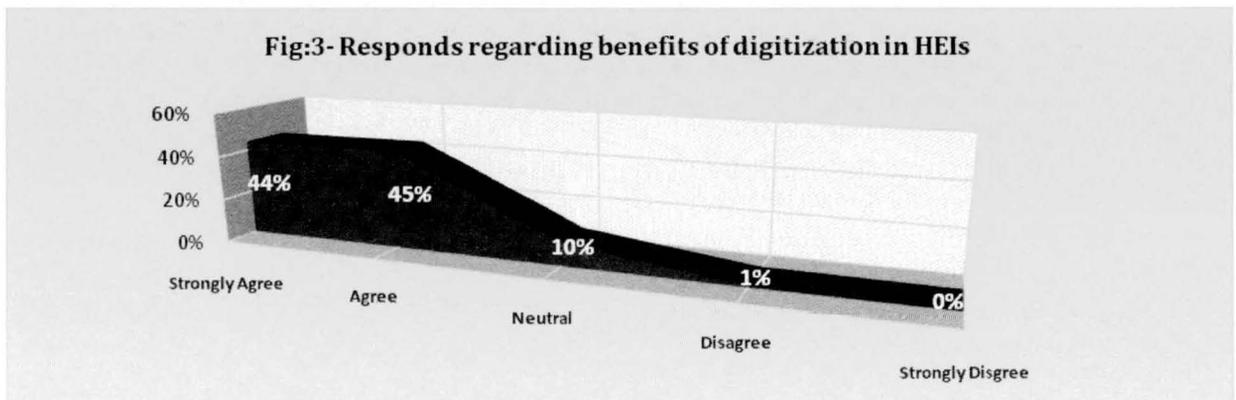
While analyzing data questionnaires are divided into 6 categories and then graphs are prepared on the basis of the category. Questionnaire category are:

- a) Current digitization situation at universities.
- b) Benefits of digitization at HEIs.
- c) Main barrier to expand digitization.
- d) About MOOC and benefits of MOOC.
- e) About SRS and benefits of SRS system.
- f) Expectations of participants regarding digital education.

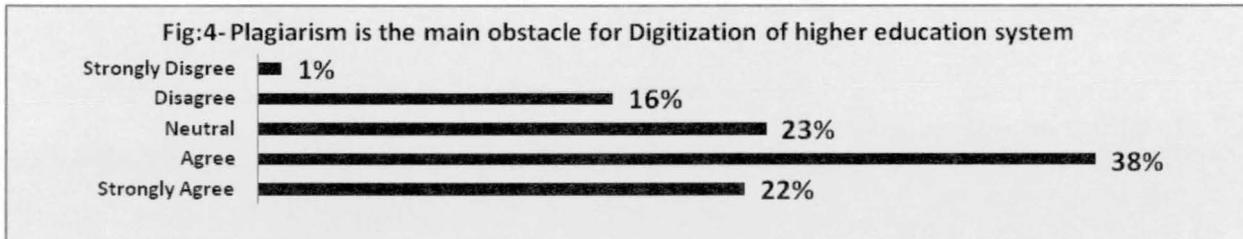
There are 5 questions in the first part of the survey. Here we surveyed and asked participants regarding present situation of their classrooms, lectures, modern technology and devices. Most of the respondents (95%) confirms that they have multimedia classrooms and above 70% respondents approves that their institute uses modern devices and technology (Fig: 1and2)



In the second part of survey digitization benefits were discussed. Participants also asked to provide their opinion regarding Nine (9) statements of benefit of digitization. Given statement of benefits consists- Increment of teacher student interaction, eases of pressure, development of communication skill, increase the learning competition, complex topic understands easily, involvement in research activities, Improve IT skills and improvement of academic results. In response 85% participants agreed about the statements and 10% were remain neutral (Fig: 3).

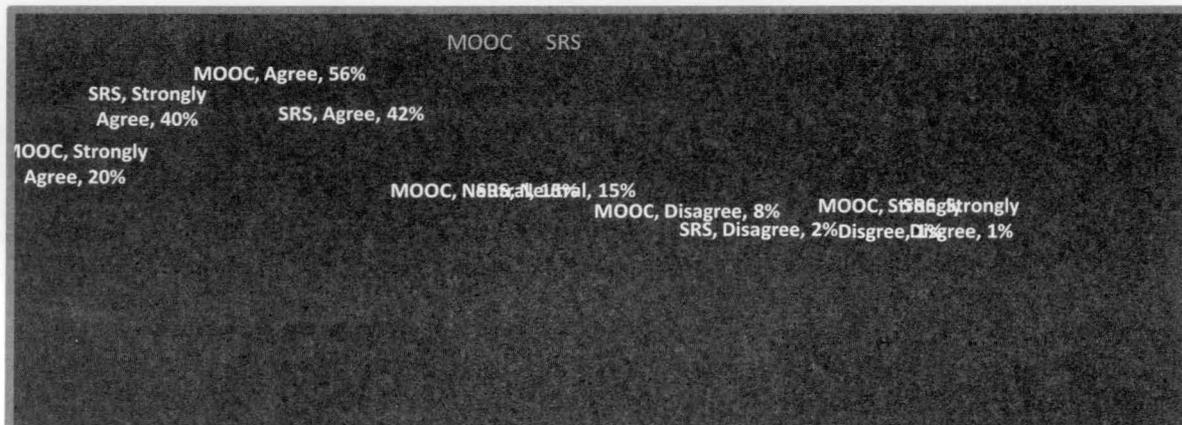


In the third segment of the survey we asked participants about the barriers of expanding digitization. In the interview some obstacles are come into the front. The main obstacles are: Cost, Lack of training, insufficient infrastructure, Plagiarism, Lack of Motivation, Inadequate Support, Assessment etc. Plagiarism is one of the ugly matters of digitization such as Misguide by wrong info, Waste of time, Increase rate of cyber bullying etc. 22% strongly agreed about the statement and 38% agreed it. 23% remain neutral and 17% respondents denies the narration (Fig: 4).



After that we wanted to know about two new important methods of education system. They are: MOOC (Massive Open Online Course) and SRS (Student Response System). They are aware of the methods and wants to welcome them in our higher education system. We asked them 4 and 3 three benefits of MOOC and SRS. 76% respondents accepts the benefits of MOOC. Among them 20% were strong agreed and 56% agreed the statement. 15% remain neutral and 9% disagree the benefits (Fig: 5). On the other hand most of the participants agreed on the benefits of SRS and 15% were neutral (Fig: 5).

Fig 5: Opinion for benefits of MOOCs and SRS



In the sixth and last part of our questionnaire we took respondents opinion about their expectation regarding online exam, distance learning and maintenance and costing for technical support.

8. Findings of the Study

The utmost significant result of this report was to grasp the situation of incorporating digitization by higher education institutes (HEIs) of Bangladesh. We have found some encouraging and cheerful view about digital education system and to boost up the quality of teaching and studying. For the transformation of needs of knowledge and education, the use of information technology can promote and help HEIs. Information technologies be able to

support HEIs to be inventive and reactive to the changing needs of students and the shifting requirements of enterprise and industry from higher education.

We have identified a number of issues regarding the governance of HEIs including digitization in higher education in Bangladesh:

- a) HEIs of Bangladesh have vision for incorporating technology.
- b) Now-a-days HEIs are using technology for administrative and academic activities (From secondary data).
- c) HEIs have well facilitated multimedia classrooms, laboratories etc. (From secondary data).
- d) Most of the students and teachers believe that technology eases their pressure.
- e) IT related knowledge and skills of teachers and students are growing by using technology in education system.
- f) Interactive communication and competition are increasing among the HEIs which enlarge the way of learning.
- g) E-learning has not started in HEIs of Bangladesh yet.
- h) Students and teachers have knowledge on MOOC. So, they recommend to start MOOC in HEIs of Bangladesh.
- i) Participants are recommended to take exam, assignments, quizzes etc. via online.
- j) Participants believe that more technical support is needed from their HEIs to introduce new technology at institutes.

We also found out some limitations to incorporate digitization in higher education institutes.

- a) Lack of fund as setting up technology is costly.
- b) Inadequate IT networking infrastructure.
- c) Lack of neoteric devices and modern laboratory facilities.
- d) Quality of education of HEIs is not monitored properly.
- e) Research facility is not incorporated adequately in most of the universities.

9. Conclusion

In the present world countries are being developed by using technology. People of this 21st century are using technology in every possible way. Current world is technology driven and for this reason we have to proper use of technology. And after using current technology we have to search new one to keep pace with the modern digitalized world. Information technology is very much important in higher education system for this reason. If the education segment practices ICTs in all potential angle, learners will become intimate with technology and can get involve in technical works which is highly demandable sector now. The expert, capable and qualified manpower will be produced. Who later on, will be capable to engage them to innovate new one. Also technology boost up the teaching standards.

Bangladesh has already taken various steps to employ and set up technology based nation. Higher education sector is given supplementary consideration to apply IT applications. Internet facility is provided to higher education institutes. Telecommunication and networking infrastructure via optical fiber is being deployed throughout the country. However these actions are not so adequate to be digitalized. There need to produce extra hard work and drive.

Some limitations like inadequate IT networking infrastructure, lack of neoteric devices, modern labs, connectivity problem, lack of comprehensive plans and efforts etc. make the passage complicated. The higher educational institutes should make inevitable that digitization and IT training are promoted by means of their incorporation in all actions in the education sector. The students, teachers and people of Bangladesh would be able to keep pace the changes and challenges of this fast growing century if the higher education system digitalized

in an efficient way. Bangladesh government should take immediate measures to improve the quality of higher education system to establish "Digital Bangladesh".

10. Recommendations

Analyzing critically the existing situation of digitization in higher education sector, some recommendations have been made. These are as follows:

- a) Networking infrastructure should be developed up to all higher educational institutes.
- b) Adequate computer lab facility, ITs applications should be ensured as early as possible.
- c) Cheap internet connectivity should be expanded horizontally. University should be given connection on very minimum charge so that all students will be able to get the internet access to learn more.
- d) E-learning or distance learning with the help of ICTs should be introduced from the university level.
- e) Initiatives to provide necessary software should be ensured.

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