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ICT for Education: The Real Scenario of Digitalization in the Context of Secondary Education in Barisal City

Hosneara Dalia
Lecturer, Department of Public Administration, University of Barisal. Barisal

Abstract
In present world, the educational system and curricula are focusing technology for education. The purpose of this initiative is to ensure a vibrant and effective teaching- learning environment for a student to cope as a future global citizen. With the advent of the information and communication technology, the traditional teaching of 'Chalk & Talk' is redesigned and supplemented by teaching with teacher-led multimedia content which is upgrading the education system. The dropout rate of the students at secondary level is comparatively more than any other level nowadays, so it is felt the necessity of finding the real picture after introducing ICT based education in secondary level. Both qualitative and quantitative approaches have been applied to collect data through both open and close-ended questionnaire survey. This study focuses on that how much digitalization enlightens the education sector and evaluates the performance by the data collected from respondents of the school.
Keywords: Digital Bangladesh**,** Secondary education, Information communication technology (ICT), Multi-Media-Class (MMC).

Introduction:

In today's world, Information and Communication Technology (ICT) is considered as one of the most effective constituents for the development of a nation. Turning Bangladesh, one of the world's least developed countries into a digitally developed nation by 2021 is one of the main electoral pledges of the present government. This vision is widely known as "*Digital Bangladesh*". For actualization of the Vision 2021, the Government aims to set up a Bangladesh where modern technology will be the driving force.

ICT for education or e-Education will also deal with providing vocational and 'lifelong education' opportunities to the youth and adults in order to retool them and build newer skills to improve their productivity (Digital Bangladesh, 2009)**.** Access to Information (a2i) project has brought a change in the paradigm from earlier philosophy of 'ICT education' to 'ICT for education' with an aim to make teaching and learning more interactive. Education system has embraced digital technology-driven modern education methods where trained teachers develop digital contents suitable for their classes by themselves and then use those contents while conducting classes in 'digital classrooms' use internet connectivity (Journey Towards A Digital Bangladesh, 2013). An online monitoring system, "Dashboard," has been developed by A2I for the monitoring and management of MMC activities all over the country. Moreover, the digital content portal, "Shikkhok Batayon," has been created by "British Council" in order to share e-contents. The government has targeted ICT as the major driving force in this regard to create a SMART (simple, measurable, accountable, responsive and transparent) 'Digital Bangladesh'.

Review of Literature:

To digitalize the education system, the ministry of education in Bangladesh started distribution of computers in secondary level educational institutions and include ICT as a mandatory subject for secondary education. All classrooms in primary, secondary, tertiary and professional education must be turned into multimedia classrooms with appropriate infrastructure consisting of reliable power, high-speed internet and necessary equipment with teaching staff well equipped to use The philosophy of "Digital Bangladesh" comprises of ensuring people's democracy and rights, transparency, accountability, establishing justice and ensuring delivery of government services to each every door through the maximum use of technology with the ultimate goal to improve the daily lifestyle of the general people (Asaduzzaman, Rahman, & Jinia**,** 2011)**.** Prime Minister of the People's Republic of Bangladesh stated in COMMONWEALTH HEADS OF GOVERNMENT MEETING "The 'National ICT in Education Roadmap' has been able to take the nation towards unprecedented adoption of ICTs in both public and private classrooms. In fact, it is not 'ICT Education' but rather 'ICT for Education' that is the principle that underpins our government's initiatives (Hasina). Nowadays information and communication technologies (ICT) in the education sector keeping very important role to modernize and updated the technology into the educational activities (Mahfuz, 2015). With the successful implementation of ICT in the education system, the government can look at a greater participation of the country in the global information society. It is hoped that ICT will impact the access, cost-effectiveness, and quality of the education system too (Survey of ICTs for Education in India and South Asia, Country Studies, 2010). The government of Bangladesh has taken some initiatives to integrate ICT in education system and one of these is to digitize the academic books both in primary and

secondary levels and distribute these across the country so that the students in rural areas can download the books from the Internet at free of cost and thereby facilitate the education system (Khan & Ashraf, 2013).

ICT creates a number of problems in education, such as digital equity, the need for a relatively expensive addition to a school's infrastructure, and how to provide appropriate ICT education for preservice and in-service teachers. ICT in education creates problems of how to deal with potential changes in curriculum content, instructional processes, and assessment in a manner that leads to students getting a better education. ICT creates the problem of deciding what we want students to learn about ICT (Moursund, 2005). But ICT can provide students and teachers with a large body of easily accessible information; create opportunities to reinforce learning basic, new, and higher-order cognitive skills; and increase student interest and motivation, parent-school communication, and parent involvement (Romke, 2013). However, most of them discussed about digitalization in overall sector of education and that papers did not specify the secondary education specially. Hence, the effectiveness of the concept "**ICT for Education"** is identified as focus of this study. This study investigates status of ICT in secondary education related activities and provides comprehensive recommendations to build a digital society in Bangladesh in the near future.

Research Objectives: This is an empirical research. The objective of this study is-

- ✓ To find out the real scenario of digitalization and its impact in the context of secondary education in Barisal.
- ✓ To recommend actions to enhance amplification of digitalization in the field of secondary education.

Methodology:

This study is based on both primary and secondary sources of data and information, and involved with both qualitative and quantitative research approaches. Relevant data were collected through questionnaire and interview method from head teachers, general teachers and general students respectively of the secondary educational institutions in Barisal city. The questions were both open and close ended.

For conducting this study, first (convenience sampling) was used for selecting 15 schools among 48 schools in the study area. After that (Stratified random sampling) was used at the time of collecting data from strata. At the time of doing these study three strata was selected from each of the study areas that's are- headmasters, general teachers and obviously students of the school. The composition of the respondents is given below-

Study Area	Stratum	No. of Respondents
Secondary Educational Institutions in (Barisal City)	Headmaster	15
	General teachers	30
	General students	15
	Total-	60

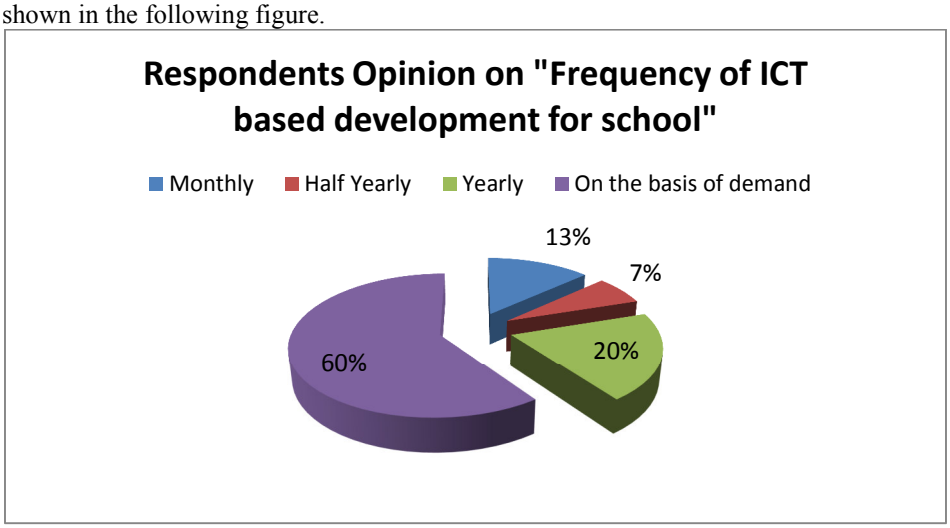
Analysis of the Data:

In this study data collected through questionnaire from the headmasters and general teachers and interview was taken to the students on the basis of the specific questionnaire of the secondary educational institutions in Barisal city.

"Data Analysis on the Basis of Head Teachers' Information"

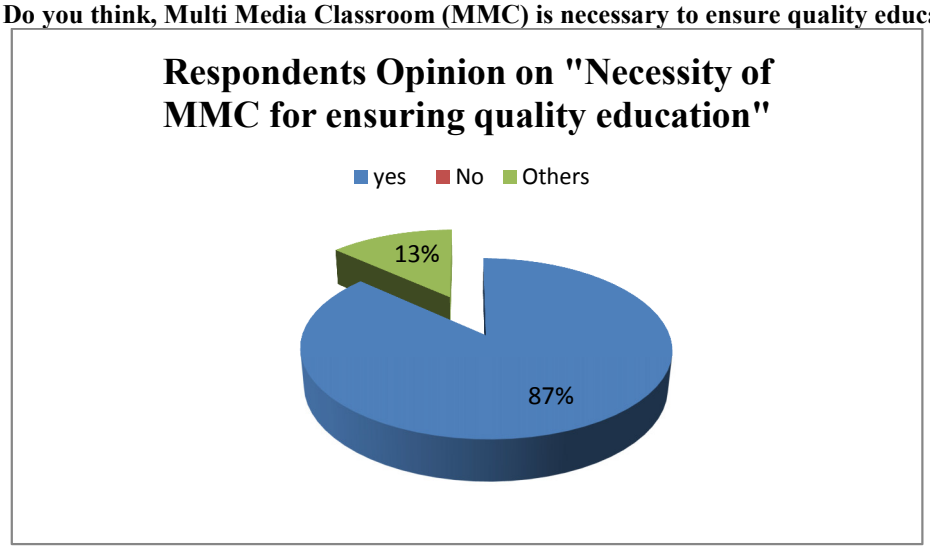
Question -1. How frequently you make ICT based development program for your school?

This can be shown in the following figure.



The chart shows that 60% respondents make ICT based development program on the basis of demand of their school, 13% respondents answered monthly, 7% respondents answered half-yearly, 20% respondents make related program yearly in their school.

Question-2: Do you think, Multi Media Classroom (MMC) is necessary to ensure quality education?



It is evident from the chart that 13% respondents replied differently about this question that, there is no doubt about MMC for ensuring quality education and 87% replied about the myriad necessity of MMC. Nobody replied negatively against this question.

Question- 3: Have enough facilities for conducting MMC in your school?

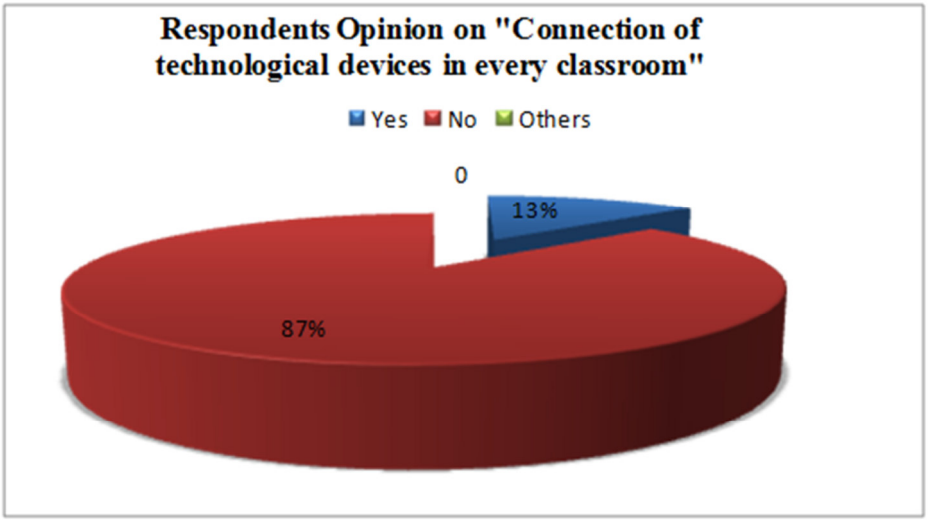
As they are closely related to the managerial activities of the school because of their head post, this question was also asked to the respondents. But surprisingly all of them answered this question negatively that they have not enough facilities for conducting MMC in their school.

Question- 4: In your opinion the decision taken to conduct classes using multimedia by teachers is how far appropriate?

All the fifteen respondents acknowledged that they strongly believed that the MMC is necessary and best initiative taken by the government for engaging their students with a new journey. They believed that the method contributes to enhance teacher's self-confidence, make communication easier than before with the students, complicated topics can be taught easily and effectively.

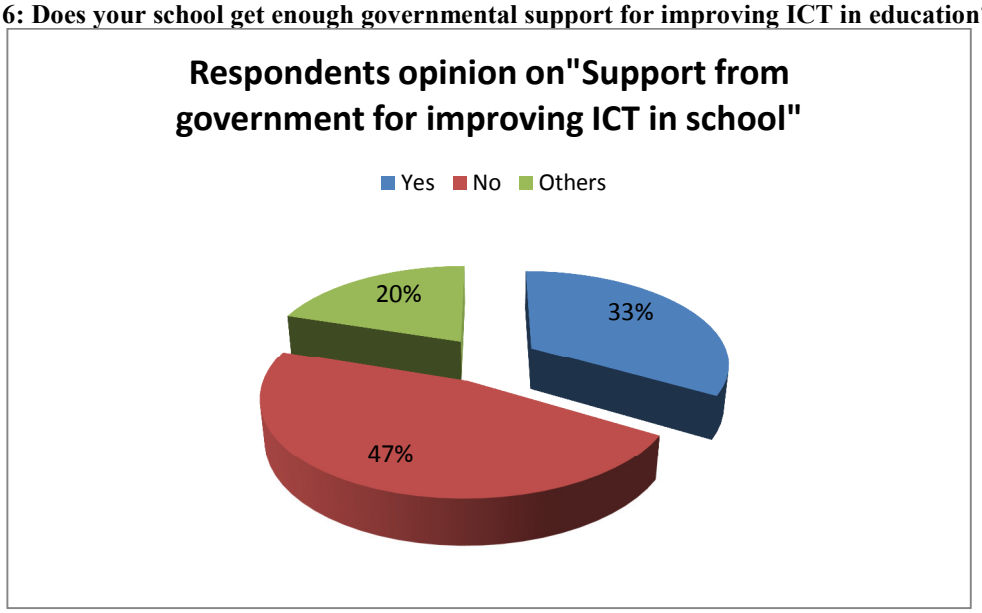
Question- 5: Is there proper connection of technological devices in all classes?

This can be shown in the following figure.



The chart illustrates that only 13% respondents replied positively about this question that they have technological devices in every class room. On the other hand 87% respondents replied negatively about this question that they can't maintain technological devices in every classroom because of their shortage of equipment's and other technical problems.

Question- 6: Does your school get enough governmental support for improving ICT in education?

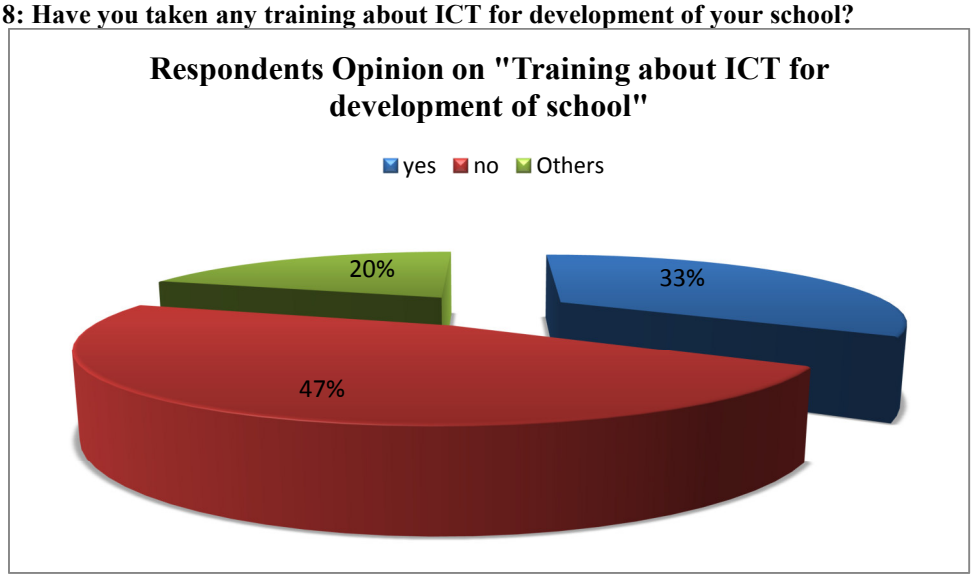


The chart delineates that only 33% respondents replied that they get support from the government. That's are- financial support, training and equipment's support also. But 47% respondents replied clearly that they don't get proper support from the government. On the other hand 20% respondents replied this question differently, that they get support from the government but that procedure is too long and for that result they can't use that for their students.

Question-7: Which plans are taken in your school implementing to ensure quality education through MMC?

This is one of the biggest themes of this research to find out the eagerness of the head teachers for implementing quality education through MMC. This question was also asked to the headmasters who are directly linked with the maintaining activities of the school. In this question all fifteen head teachers described their activities in this sector, they focused on the following issues that's are- ICT training for their professional development**,** providing and repairing ICT materials**,** trying to make MMC available for students and help teachers for preparing e-content for presenting in classroom. Though they don't implement the all above mentioned issues and don't get governmental support properly after that they try to implement the above mentioned initiatives for ensuring quality education through MMC.

Question- 8: Have you taken any training about ICT for development of your school?



To find out the real scenario of training of head teachers, when the respondents were asked about ICT training for development of their school, surprisingly only 33% respondents replied that they have training about ICT. But it is too pathetic that 47% respondents replied negatively this question that they don't get any training about this ICT concept. On the other hand 20 % respondents replied this question differently that they get

training about the concept of ICT but they can't learn anything from that training because the duration of the training was too short and it quite impossible for new learner to learn something from that training.

Question-9: Has any change come regarding the dropout rate of students in your educational institution because of the introduction of this MMC?

All fifteen respondents share their positive opinion about this concept that undoubtedly MMC bring changes in education sector and it obviously reduce dropout rate of students in their school. They focused on the following issues-

- ✓ It helps students to be more engaged in the teaching -learning process which makes them active, interested and motivated
- ✓ Involve students in different classroom activities such as: individual work, peer learning, group work etc.
- ✓ Students can complete lessons in their class and no separate learning materials required.
- ✓ Retention rate enhanced because of learning through visualization.

Question-10: To what extent have you received the funding support for the use of technology?

In this question all the fifteen head teachers claimed this answer similarly. They told that to bear the expense for the maintenance of the MMC materials like- fixing the broken computers or projectors and paying internet bill, they faces various limitations.

Head teachers of the private schools stated that they maintained an annual fund or budget, which was basically funded by the government and the students. In terms of fund management, head teachers of government schools had limitations in collecting money from their students. They mainly had to maintain everything depending on what they got from the government. It is not possible to get financial support from anyone except the government.

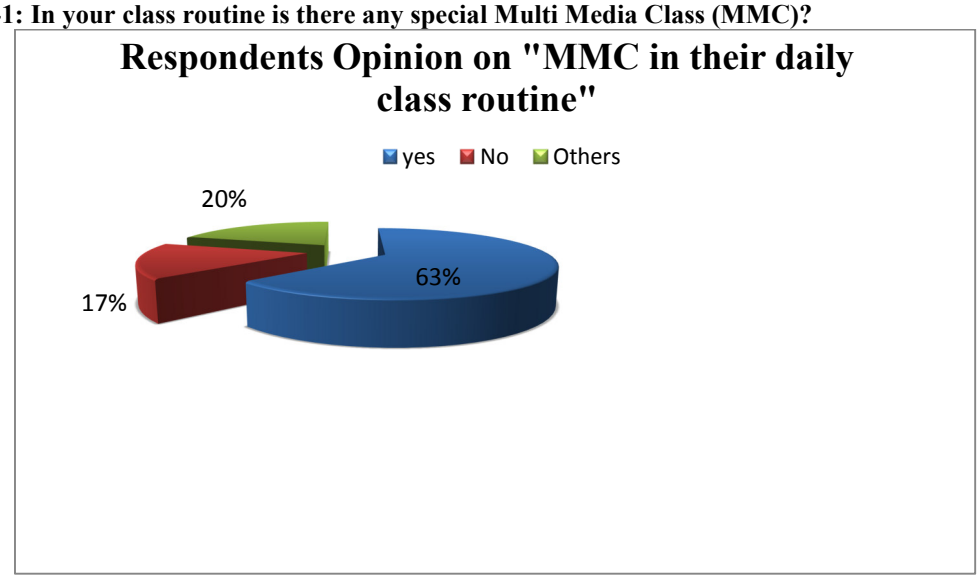
Question-11: According to you what kinds of procedure can increase ICT based education system in your school and as well as all secondary educational institutions in Bangladesh?

Head teachers of this study area have suggested some opinions for accelerating the use of ICT in their school as well as all secondary educational institutions in Bangladesh. That's are-

- ✓ Introducing the Multimedia Classroom (MMC) approach mandatory in the secondary schools to improve the teaching learning quality.
- ✓ An advanced teachers' training course should be designed for multimedia content development
- ✓ Effective monitoring system of government must be developed to ensure better performance
- ✓ Providing all necessary materials for conducting MMC smoothly in all secondary schools in Bangladesh.

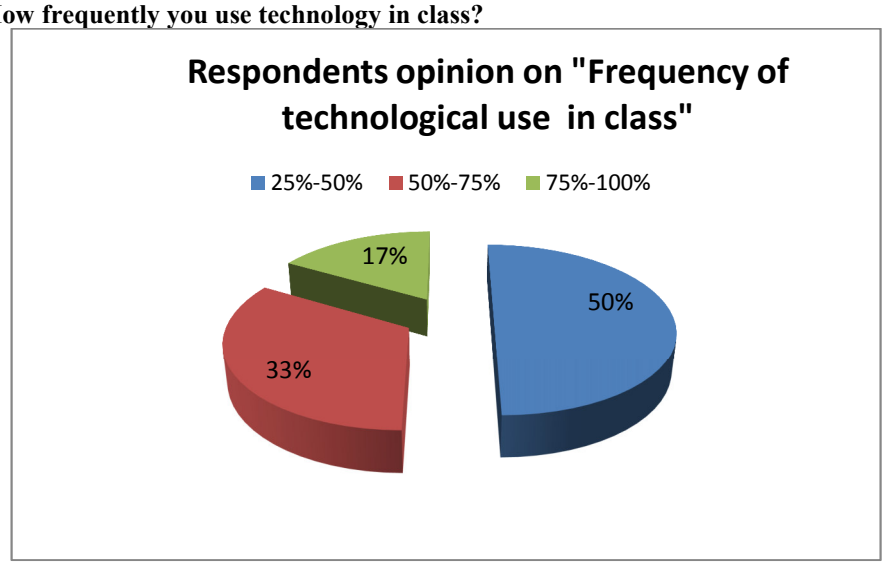
"Data Analysis on the Basis of General Teachers' Information"

Question-1: In your class routine is there any special Multi Media Class (MMC)?



The chart shows that 63% respondents answered positively whereas it was very wondering that in this time 17% respondents still answered that MMC is not present in their daily class routine. On the contrary 20% respondents replied that MMC is present in their daily routine but for many limitations they can't take classes through using technology.

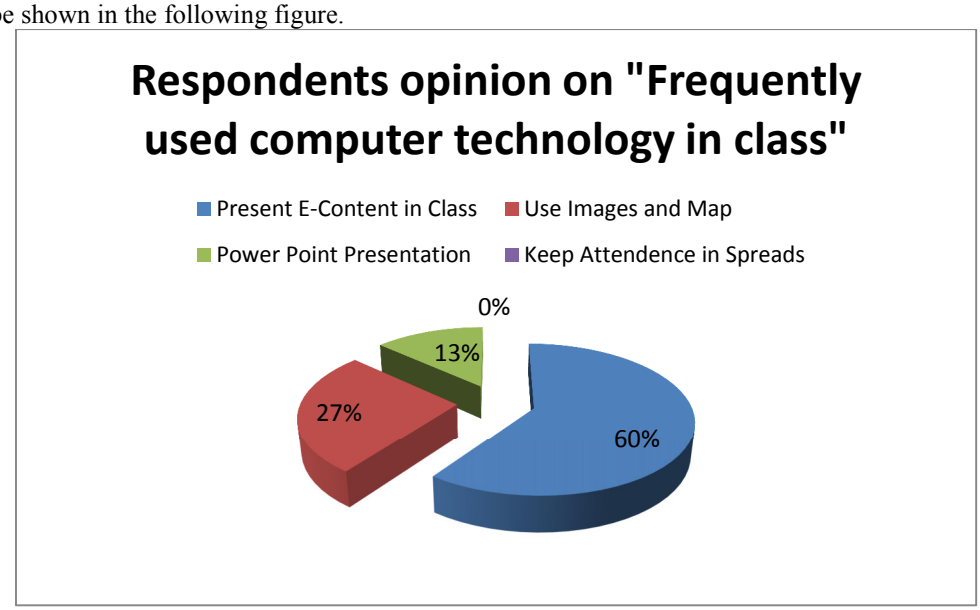
Question-2: How frequently you use technology in class?



The chart illustrates that 50% respondents use technology in their classroom (25%-50%) and 30% respondent opined that they use technology in their classroom (50%-75%).On the other hand only 17% respondents answered that they use technology in their classroom (75%-100%) which is basically poor. Teachers have lack of knowledge of using technology properly.

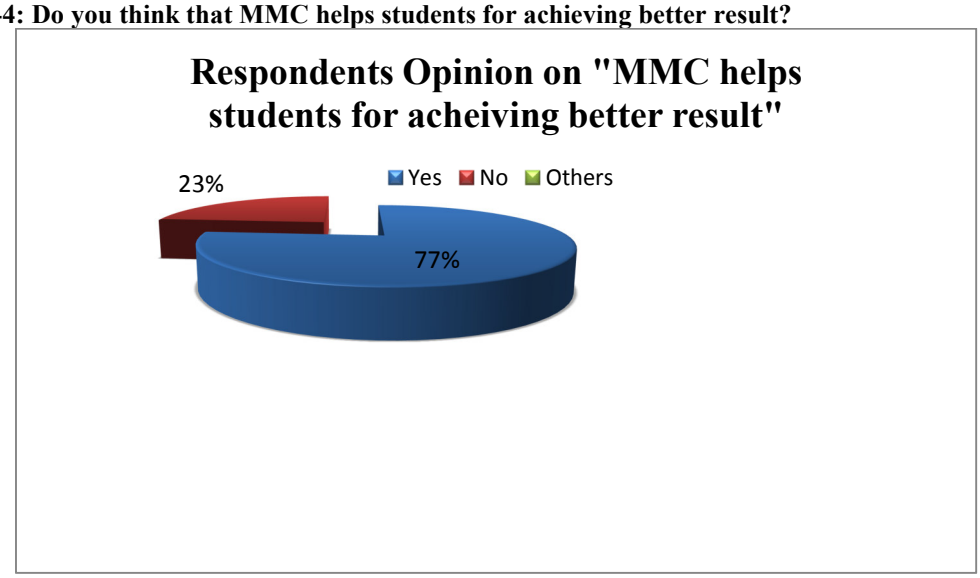
Question- 3: For what purpose you use Computer technology in your classroom?

This can be shown in the following figure.



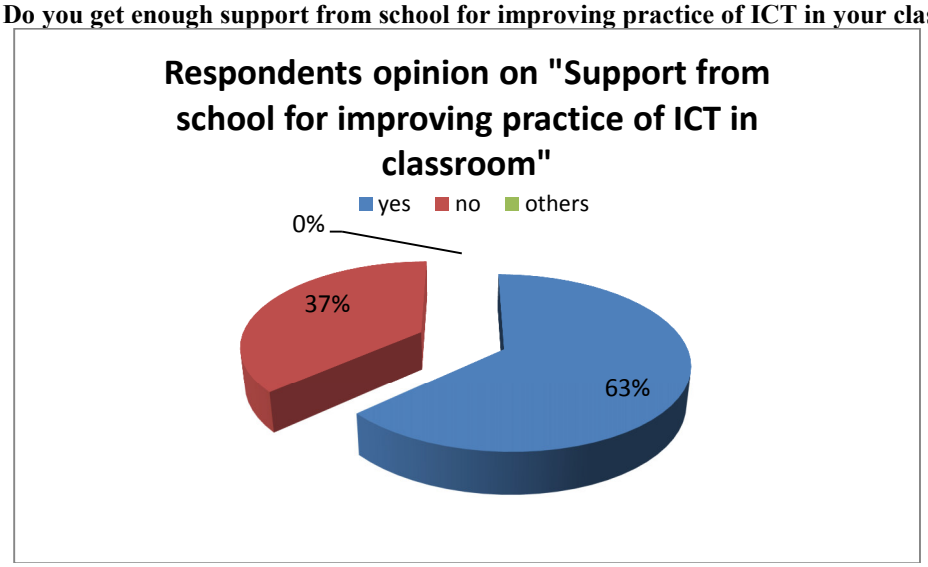
When the respondents were asked this question then, majority of the population like 60% answered that they present e-content in their MMC for teaching their students. 27% respondents opined that they use image and map in their class and 13% respondents opined that they present power point presentation in their MMC. On the other hand no respondents replied anything about keep attendance in spreads, the use of this method is totally absent in this study area. They still use that traditional register book for keeping students attendance.

Question-4: Do you think that MMC helps students for achieving better result?



In this present era of digitalization, MMC has a great impact for achieving better result but what the actual extent is? When the respondents were asked this question 77% respondent gave positive opinion about this concept that it obviously helps students for achieving better result. But 23% respondents replied this question negatively that it has impact but at a certain stage. They told that they cannot present everything from the book through technology. So students have to stick to their academic books as well as should follow their class lecture properly for achieving better result.

Question-5: Do you get enough support from school for improving practice of ICT in your classroom?

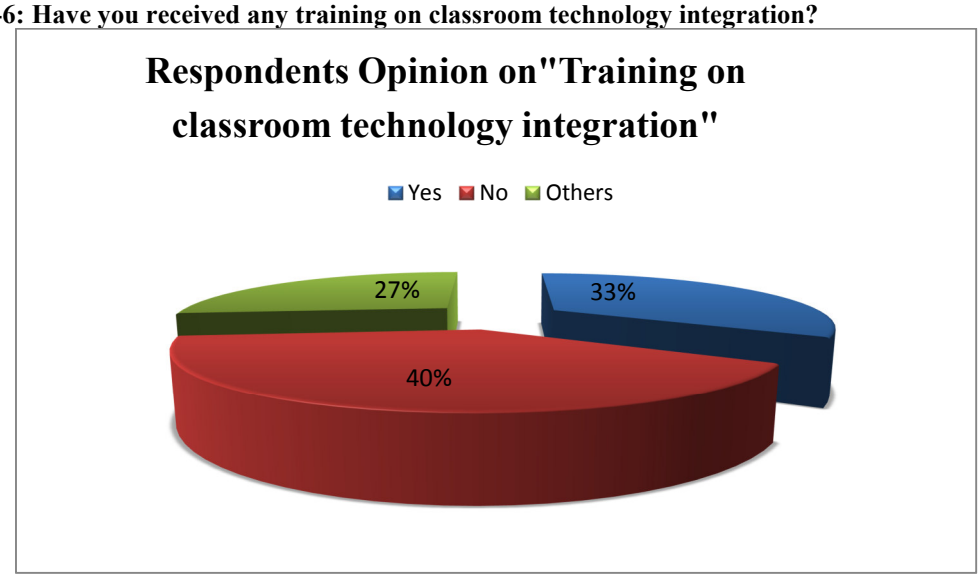


Necessary support from school is one of the major prerequisite for practicing technology in education sector in this new age of digitalization.

When the respondents were asked their opinion about enough support from school for improving practice of ICT in your classroom then 63% respondents replied that they get support from school as far the school can provide them. According to them, the teachers are very supportive and helpful to each other, they act like a team. Even head teachers become the part of the team and sought opinion from them to make decisions about use of ICT in school.

But 37% respondents replied that they don't get enough support from the school due to various limitations and for that reason they can't take any major initiatives for accelerating practice of ICT in their school.

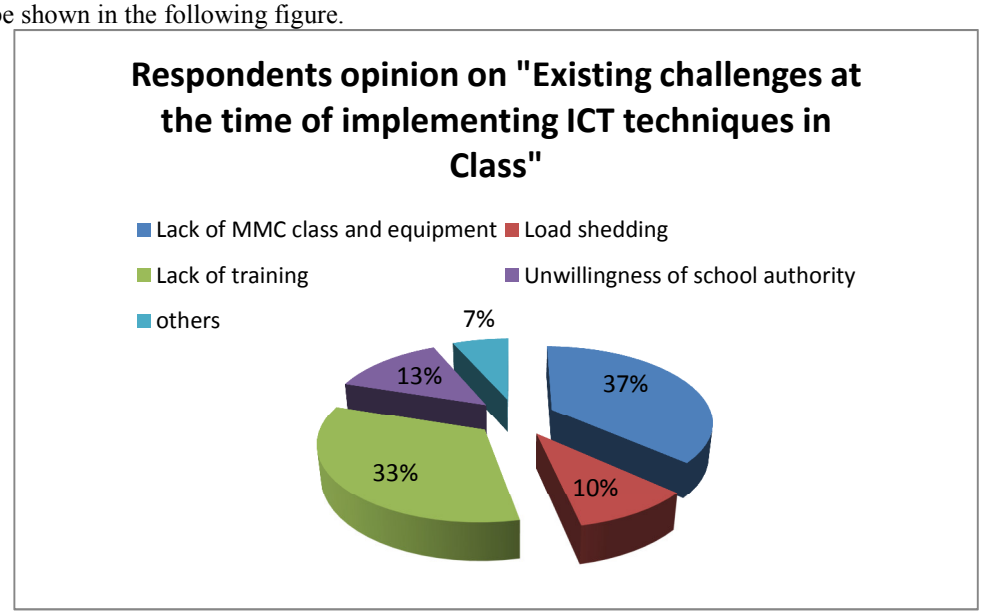
Question-6: Have you received any training on classroom technology integration?



To find out the real scenario of training of general teachers, when the respondents were asked about training on classroom technology integration, surprisingly only 33% respondents replied that they have training about ICT. But it is too pathetic that 40% respondents replied negatively this question that they don't get any training about this ICT concept. On the other hand 27 % respondents replied this question differently that they get training about the concept of ICT but they can't learn anything from that training because the duration of the training was too short and it quite impossible for a new learner to learn something from that training.

Question- 7: What are the existing challenges that you face in the classroom at the time of implementing ICT techniques?

This can be shown in the following figure.



The diagram shows that most of the teachers (47%) informed that 'lack of MMC class and equipment's' is the most major obstacle to the conduction of MMC classes. About 33% teachers pointed out 'lack of ICT training'. The other important reasons which they pointed out were the 'Unwillingness of school authority'- 13% respondent told on this issue. 10% respondents replied about the problem of 'load shedding' that is a major obstacle in this regard. On the other hand 7% respondents also mentioned about other problems like—unavailability of internet, lack of positive attitude among some teachers in favor of using of new technologies etc.

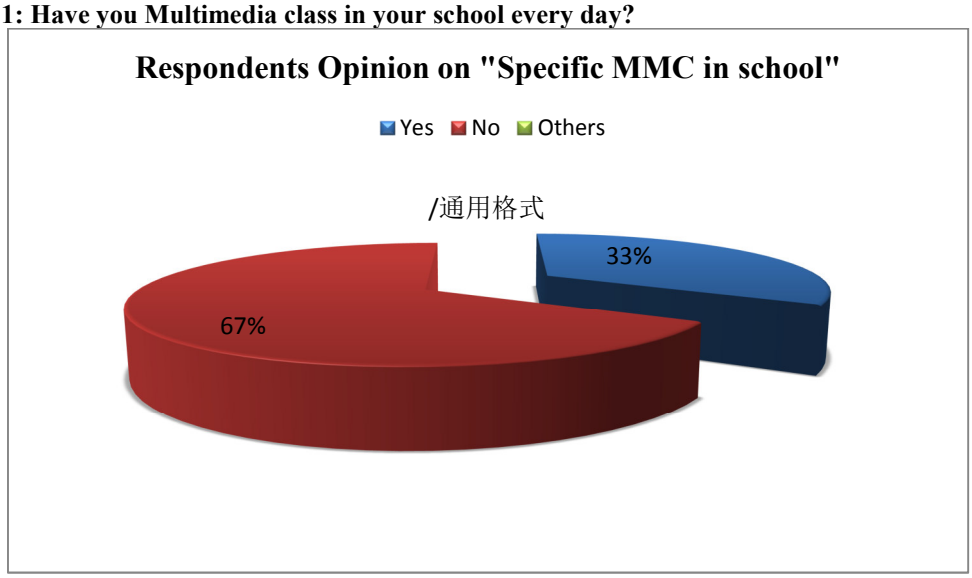
Question-8: According to you, what kinds of procedure can increase ICT based education system in your school and as well as all secondary educational institutions in Bangladesh?

When the respondents were asked this question, general teachers of this study area suggested some opinions for accelerating the use of ICT in their school as well as all secondary educational institutions in Bangladesh. That's are-all the primary and secondary classrooms should be converted into Multimedia Classrooms (MMC),

"Teacher Training Course" should be designed based on the ICT, training time should be increased for the betterment of teachers, have to ensure available equipment's for all secondary schools equally and proper implementation of educational technology related policies etc.

"Data Analysis on the basis of students' information"

Question- 1: Have you Multimedia class in your school every day?



When the respondents were asked their opinion about conducting Multimedia classroom in their school every day, then only 33% respondents replied that their school has specific MMC and every day they attend MMC. On the other hand 67% respondents replied that there school has no specific MMC like other schools because of the shortage of relevant equipments' and they can't attend MMC every day. In their class routine MMC is present but after that for myriad limitations hardly they get chance to attend MMC properly.

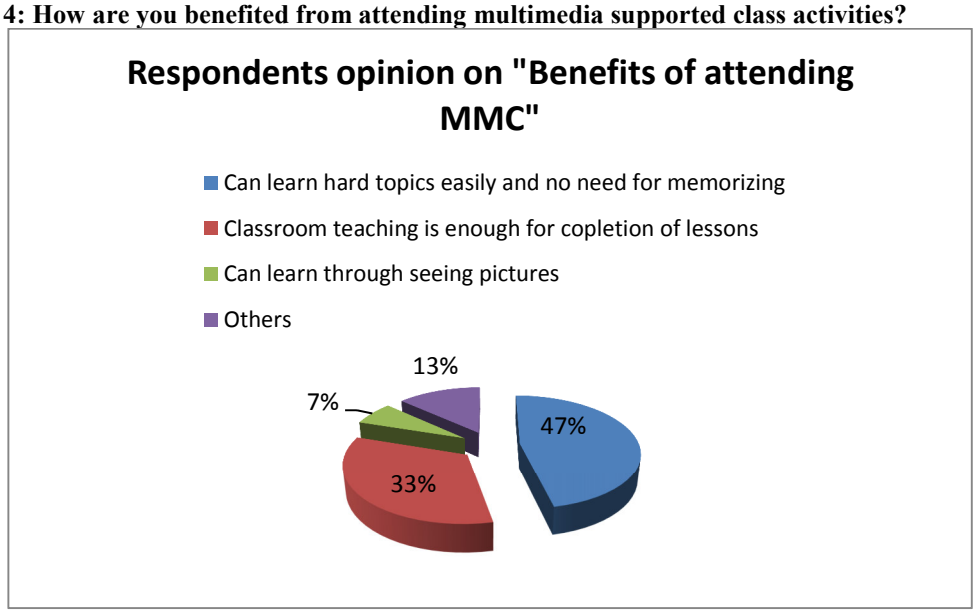
Question-2: What kinds of tools teachers use in the MMC during teaching?

The valuable respondents answered that there teachers generally use computer and projector at the time of taking classes through technology. But some of the respondents replied differently that there school has several limitations about technological equipment's, and for that reason always their teachers don't use technology for taking classes. But when teachers get chance they generally use only computer and through using it, they try to present various concept before students. They claimed that, that system is too problematic to learn or see something without projector.

Question-3: Do you think all teachers should conduct classes using multimedia?

All of the fifteen students replied positively, when they asked about this concept. They replied that it is a very good initiative and obviously all teachers should conduct classes through using technology. Because through this system they feel very interest to learn something new and easily can understand any topic. They also mentioned about technology based assessment system that is not present in all schools and wanted proper help from government and their school in this regard.

Question- 4: How are you benefited from attending multimedia supported class activities?



The respondents were asked their opinion about how they are benefited from attending multimedia supported class activities and asked them through a checklist. Then 47% respondents replied about that they can learn hard topics easily and no need for memorizing. After that 33% respondents replied that classroom teaching is enough for completion of lessons. About 7% respondents claimed that they can learn through seeing pictures. On the other hand 13% respondents replied about other benefits like- enjoying class, less pressure on reading at home, can know updated Information etc.

Question -5: Have you identified any difference between the traditional system and use multimedia system in teaching?

When the respondents were asked this question all of them shared a same opinion that there is a large difference between traditional system and multimedia system.

They mentioned that in the past time class was too boring and they loss their attention when teachers teach them about any complex topic. But after establishment of this new system they never feel bored when they are in class and they feel very interest to learn new knowledge through technology.

Question-6: Have you identified any problem in conducting class using multimedia?

When the respondents were asked to identify the obstacles of following MMC approach, most of the students informed about same problems. That's are lack of sufficient number of fixed and appropriate class room, unavailability of internet at school level, lack of sufficient infra-structure and ICT materials for using ICT in education, mechanical problems including materials and unavailable electricity etc.

Question-7: according to you, what kind of measures should be taken for ICT based education in Bangladesh?

The students were asked this question about their future dream for ICT based education in Bangladesh and they pointed out to ensure some specific issues, that's are- availability of MMC and sufficient equipment's in all school, all of the classes should be conducted through using ICT that helps students to learn their knowledge perfectly, have to arrange conferences, workshops and other programs about ICT for the students, proper monitoring and support of government should be necessary for development of ICT based education in secondary school in near future.

Recommendations and Conclusion:

ICT is a new concept in education and most of the students are still not efficient in this system. The scenario of teachers is also the same; most of them replied that they can use technology but not very perfectly. MMCs are present in the daily class routine, they take class through technology but for the limitations of equipment's most of the time they conduct their classes through the traditional ways. Emphasis has to be given on proper maintenance of MMC in school.

Shortage of teachers is one of the largest constraints to the integration of ICT into the education. They are always burdened with heavy workload. In these circumstances teachers don't have time to design, develop and incorporate technology into the teaching learning situation. So a good number of teachers should be appointed in school.

Effective monitoring system must be developed to ensure better performance. Local level education administrators should be involved in monitoring and mentoring of the initiatives of ICT in school. Use of ICT

and multimedia in the education makes it interesting and fruitful system. Website of the institution should be compulsory along with regular updates.

There are various educational technology related policies are present in our country like- National ICT Policy 2009**,** National Education Policy 2010**,** Master Plan for ICT in Education (2012-2021**).** A well-coordinated and structured policy can lead Bangladesh to achieve its digital vision during 2021.

ICT equipment's like- computer, projector, internet connection etc. and furnished separate MMC are very inadequate in secondary schools. There is a large gap between number of students and amount of MMC materials and class for conducting MMC smoothly. It is declared by the government to take all classes through technology but still all classes are not prepared perfectly through using technology. So it is recommended that all the secondary classrooms should be converted into Multimedia Classrooms (MMC) to reduce the dropout rate by increasing attendance, and improving student performance making classroom teaching interesting and effective.

Technology based assessment system of students is not yet available in secondary schools. Most of the head teachers has no knowledge about this system and has no eagerness to implement this system in their school. It has to be formed for increasing the student's best performance in school.

Though government has various initiatives for spreading ICT based education all over the country but it disrupted through corruption. The misuse of government funds is a very common scenario in all sectors. To buy modern teaching and learning materials for the improvement, huge budgets are passed. But in the end of the year only minor changes are found in the overall educational sector in our country. So monitoring of government should be increased in this regard for distributing government funds without any mess.

Although Government institutions provide training but scenario about training of teachers is too problematic. Most of them never take any training about ICT. Some of them receive training about this issue but they can't learn anything from that because of shortage of time. Time should be increased in this regard so that they can actually learn from the training.

In disseminating ICT and new technologies which may improve the overall learning style of the students and they want to joined various conferences, workshops and other technical gatherings arranged by the educational institutions in collaboration with other government and non-governmental agencies.

Myriad obstacles are present in the secondary schools on the basis of use of technology in secondary education like- lack of MMC equipment's and classroom, lack of training, unwillingness of school authority etc. But no teacher eagerly takes any initiative in this regard to solve this problem and these problems also exist in schools and never eliminate properly. So in this regard along with government and school authority teachers should take proper initiatives to overcome these challenges and ensuring proper and quality education in school.

- To ensure the sustainable development of ICT based education in our country,

Secondary schools have an essential part to help today's learners. To be effective in these part, educational policymakers must comprehend the issues and legitimate issues raised by the technologies used in schools. They should set practical arrangements. They should likewise instruct teachers about critical technology beliefs issues. The government and the school authority have to be active in this regard. Otherwise, the dream of digital Bangladesh incorporating with "ICT for Education" will remain unfulfilled.

References

Asaduzzaman, M., Rahman, A. M., & Jinia, N. J. (2011). E-governance Initiatives in Bangladesh : Some Observations. Nepalese Journal of Public Policy and Governance, 47.

Digital Bangladesh. (2009, November 5). Concept Note, p. 6.

Hasina, H. S. (n.d.). Creating a Digital Bangladesh. COMMONWEALTH HEADS OF GOVERNMENT MEETING (p. 47). FIRST.

Journey Towards A Digital Bangladesh. (2013, June). Update 2013, p. 3.

Khan, A. R., & Ashraf, D. M. (2013). The Impact of ICT on Education: A Study on Rural Schools. Communications in Information Science and Management Engineering, 1.

Mahfuz, T. (2015). A Statistical Case Study of using ICT in Educational Sector in Rural Context of Bangladesh. Global Journal of HUMAN-SOCIAL SCIENCE: C Sociology & Culture, 1.

(2010). Survey of ICTs for Education in India and South Asia, Country Studies. PricewaterhouseCoopers

Moursund, D. (2005, January 1). Introduction to Information and Communication Technology in Education. p. 6.

Romke, R. A. (2013, July-December 2). Digital Divide in Primary Schools of Bangladesh. p. 236.