Challenges of Virtual Teaching Learning Activities in Bangladesh

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Abstract

Higher education institutions are compelled to modernize their systems and practices because of the competitiveness of the 21st century. In today's fast paced world, it is considered that education is incomplete without using technology in teaching-learning activities. The use of ICT in higher education has dramatically restructured the teaching and learning process all over the world. It serves as an important medium for promoting advanced teaching-learning methods. Bangladesh is advancing in ICT to keep pace in the changing world. It was almost unexplored the status of ICT based-teaching learning activities at the tertiary level in Bangladesh. But it is unveiled during the pandemic COVID-19. Due to lack of ICT infrastructure and ICT based-teaching learning environment, the tertiary level education has been shuttered in Bangladesh. Both the teachers and students of the country are suffering from low technological advancement due to their poor economic condition. The higher education institutions have insufficient technical and structural capabilities to implement virtual teaching learning activities in the country. So it is very difficult for the higher educational institutions to implement virtual education ignoring the challenges. This study investigates the challenges of virtual teaching learning activities at the tertiary level education in Bangladesh. A mixed method research approach is followed, using both primary and secondary sources of data, to prepare it. Primarily, it is revealed that the virtual teaching learning activities at the tertiary level in the country is not satisfactory. During the pandemic COVID-19, the public universities could not run their teaching-learning activities as expected. The public universities faced difficulties to offer teaching-learning activities virtually due to limitation of ICT infrastructure, uninterrupted internet connection, price of net package, affordable capacity of net for students, socio-economic condition and so on. However, this study puts some suggestions for the improvement of ICT based-teaching learning activities at the tertiary level in the country.

Keyword: ICT, Virtual teaching learning, Tertiary Education, Bangladesh

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Introduction

The importance of education for all kinds of development of a country cannot be ignored. As higher education is directly linked to development, higher educational institutions are compelled to modernize their systems and practices because of the competitiveness of the 21st century. In today's fast paced world education would be incomplete without using of technology because it helps effective teaching-learning activities. Bangladesh is advancing in technology to keep pace with the present world. The development of modern technologies and its usages in tertiary level education has dramatically restructured the teaching and learning process (Pulkkinen, 2007). Virtual education is now possible for the swift improvement of modern technology and it has made the tertiary education internationalize and commercialize (Freitas & Conole, 2010). In order to learn both teachers and students can consider ICT as resources because it gives them opportunity to share their talent and experiences for making themselves update with the modern technological equipment and latest ICT tools(Ferreira, Haddad, & Faria, 2014). ICT can promote cooperative learning as a valuable gift and also support knowledge development on a wide array (Albayrak & Yildirim, 2015).The application of ICT facilitates the teaching and learning process. It makes the teaching and learning process enjoyable and easily perceptible. It also gives better access to teaching-learning resource materials (Khan, 2014).Successful use of technology depends on its facility, engage students in collaborative learning as well as raise their social interaction (Dodge, Colker, & Heroman, 2003). It is impossible to get better feedback without the appropriate application of technology. Effective learning improves the quality of student, increase creativity and improve their problem-solving skills (Shahadat, Mahmud, & Clement, 2012).Considering the importance of ICT-based education, the government of Bangladesh has strengthened the application of ICT education for improving the teaching and learning environment in the country. Consequently, the ICT apparatus such as computers, Internet and broadcasting technologies have been considered as important tools for understanding a new paradigm of learner oriented education (Watson & Watson, 2011). In the 21st century, higher education is available through distance in almost every country. A massive change is occurred in this century and virtual education has got a great demand all over the world. Technology based infrastructures, adequate capital, proper knowledge of technology and inspiration are prerequisites for effective execution of technology to promote virtual learning at the tertiary level (Bhuasiri, Xaymoungkhoun, Zo, Rho, & Ciganek, 2012). But both the teachers and students of Least Developed Countries (LDCs) and developing countries like Bangladesh do not get ICT advantage properly to promote virtual learning because of vulnerable economic condition. Besides, there are many other challenges which have been well reflected in the COVID-19 situation. On March 8, 2020, the first three cases of COVID-19 were detected in

Bangladesh (IEDCR, 2020). In order to reduce the risk of spreading COVID-19, Bangladesh government decided to close the educational institutions like many other countries. According to UNESCO (2020b), all schools, colleges and universities, as well as other educational institutions, have been closed due to adverse effect of COVID-19 across the country which have an adverse impact on over 60% of the world's students population. In this pandemic situation, among all the students, students have noticed a major disruption in education. Considering the health issue, Bangladesh government decided to run the classes through online as an immediate action to continue the teaching-learning process during the temporary closure of educational institutions. During COVID-19 pandemic, in order to remove the academic crisis, virtual learning has certainly been one of the most popular ways of teaching and learning. Conducting classes through online has some benefits such as: it helps to keep the students on the right track of learning during this critical situation, gives the student opportunity to complete their courses timely, making them confident to endure exams and test conducted in online and building strong communication between students and teachers. On the other side, the challenges of virtual classes are creating hindrance on the way of conducting classes properly. Some notable challenges are lack of digital literacy, unreliable signals with an excessive internet cost, and maintaining communication with individuals (Alam, 2020).They had faced various kinds of challenges such as- challenges in switching to online lectures, communicating with teachers, and dealing with many virtual education issues like unavailability of electronic devices, absence of internet connection, excessive price of internet, etc. (Owusu-Fordjour, Koomson, & Hanson, 2020).It is intensely appeared in the pandemic COVID-19 as most the universities were not ready to accept virtual teaching-learning activities using ICT-enabled platforms(Islam M. S., 2020).It was a big challenge for the government of Bangladesh to run virtual teaching learning activities properly. Because, Bangladesh has insufficient technical and structural capabilities to implement e-learning teaching and learning activities(Mahmud & Gope, 2009).Bangladesh has many obstacles to implement virtual learning which needs advance level of technology infrastructure and proper knowledge in technology. Scarcity of technological infrastructure, high cost of internet, slow net connection, lack of confidence in using computer, poor competencies in English, load shedding of electricity, lack of training facilities etc. are the major obstacles in Bangladesh(Khaled, 2009). In many cases, students do not have proper knowledge to use technology in an appropriate way (Rucker & Downey, 2016).Teachers' knowledge about ICT is very important for the proper utilization of ICT in the classrooms. Lack of proper skills and training of teachers is also a remarkable challenge for implementing virtual education (Afshari, Bakar, Luan, Samah, & Fooi, 2009). So it is very difficult to implement virtual teaching-learning activities at tertiary level ignoring such a big challenge.

Statement of the problem

With the evolution of Information and Communication Technology (ICT), a cabalistic change is occurred in the way the world operates and communicates. In order to find the steadiness to optimize educational outcomes to adopt ICT into education is very inevitable. Bangladesh as a developing country is trying to make its people educated and well skilled to meet the competition of the global village. The Bangladesh Government has taken many initiatives to digitize the country: to accelerate a "Digital Bangladesh" movement so as to achieve "Vision 2021". Bangladesh government has tried to use technological equipment in all sectors including education. E-learning is a valuable gift of modern science. Virtual or online education made the education very easy and comfortable for all kinds of students. But the implementation of virtual learning is very difficult for the underdeveloped or developing countries like Bangladesh due to its limited resources. There are also many other challenges which create hindrance to promote virtual learning. These challenges have been better reflected in the COVID-19 situation when the government had decided to run the classes through online. Rony et al. (2019) noted that teaching-learning through online has been the way out of a pandemic situation. Yet this new dimension requires instruction for faculty members. In this pandemic case, online teacher training is feasible and can deliver a significant outcome on the change of attitude of faculty members, but there are many challenges even now such as technical difficulties, slow internet speed, and lack of quality trainers. Students were concerned about the session jam and eager to complete their courses through virtual classes, but there have no proper technical equipment and proper knowledge required for virtual classes(Shama & Ikbal, 2020). The key barriers to virtual learning in Bangladesh are the shortage of technical resources, excessive cost of internet and economic barriers of the family. The majority of students were reluctant to join virtual classes because of the low technical support of the government (Ramij & Sultana, 2020).

As tertiary education has a great significance in Bangladesh and it is one the biggest sub sectors in education, both the public and private universities are working hard to provide tertiary education to the maximum level. The students of tertiary level also faced various kinds of challenges to attend the virtual classes. A large number of study has conducted in the pandemic situation on the challenges of virtual teaching learning activities in Bangladesh. But a limited research has conducted on the basis of the challenges of virtual teaching learning activities specifically for the tertiary level students in Bangladesh. Moreover, a few number of challenges have been mentioned in previous studies which the students had faced, but, there are many more that have not been clearly stated. So the researcher has expresses interest in working on this issue. This study will help to identify the challenges more clearly facing by the teachers and students and how

these challenges hindered the virtual education system at tertiary level. Thus the present research has an ample scope for the scholars and professionals to know what are the main challenges of virtual teaching learning activities at tertiary level in the developing countries like Bangladesh.

Rationale of the Study

The completion of the study is thought to be significant in following areas: -

Firstly, the present study has focused on the challenges of virtual teaching learning activities at the tertiary level and creates more attention from the government.

Secondly, the outcome of the research will be helpful for the government, educators, and policy makers in reviewing their policy and implementation.

Thirdly, this study has provided a full insight of the students and teachers involvement in ICT and their ability to use e-learning technology. This will be helpful for the future researchers who would aspire to carry out their research in this field.

Objectives of the Research

The broad objective of this study was to investigate the challenges of virtual teaching learning activities at the tertiary level in Bangladesh. This broad objective has been characterized into the following specific objective:

- To identify the challenges of virtual teaching-learning activities in Bangladesh;
- To explore how all of these challenges are hindering virtual teaching-learning activities;
- To put some policy implications in this regard.

Methodology

The present study was conducted mainly based on primary data. Apart from primary data, secondary data were also consulted. So, both qualitative data and quantitative data was used in the study. Both primary and secondary sources were explored to collect data. However, primary data were collected through using a questionnaire survey tool. A total of 50 respondents were purposively selected from different department from Rajshahi University, Bangladesh. In addition, four key informant interviews (KIIs), two focus group discussions (FGDs) sessions were conducted to collect data from the field level. Personal experiences and observations were also accounted in the study. Four academicians and practitioners were selected purposively as key informants of the study. Secondary data were extracted from different documents that supplement the data collected through interviews. Analysis of the data was done using MS word, MS excel and SPSS and the findings of data were presented in different form such as pie chart, bar chart and so on.

Conceptual framework

The conceptual framework is the logical guideline to accomplish a study. This study follows the following conceptual framework. As the study explores the challenges of virtual teaching learning activities in the country, the study identifies the following variables as independent and dependent variable. The independent variables bring impacts on the virtual teaching learning activities at the university level in the country. This brings ultimately negative impacts on teaching learning activities at the tertiary level in the country.

Figure: Conceptual framework
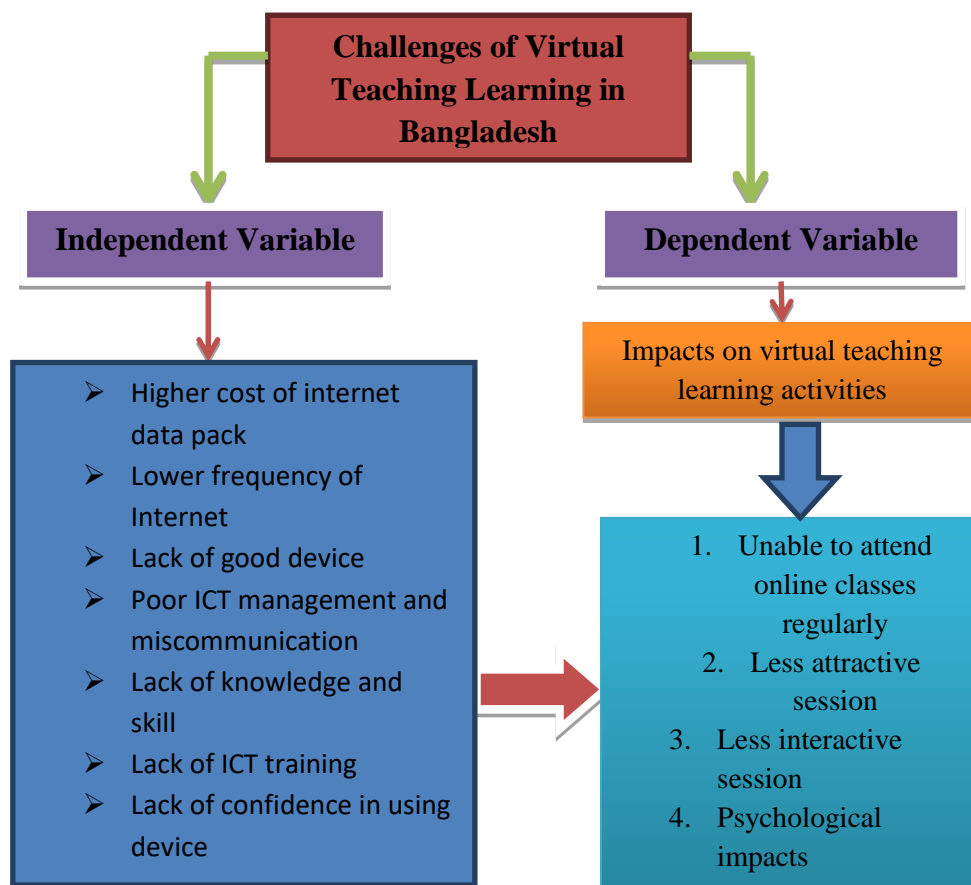
Limitations of the study

The study was conducted during the Covid-19. As a result, a number of limitations were appeared to conduct the study. However, due to COVID-19 it was very difficult to collect data from the students. So, the researchers faced many complications. As the students were not available on the campus, data were collected using google form through online. The students were not familiar with such kinds of tool to fill up form. Consequently, the respondents were reluctant to fill up the form. In addition, it needs internet connection and suitable device to fill up the form. Many of the respondents could not do so due to lack of such facilities. Another limitation was that Rajshahi University was selected as the study area for this study which may

not represent all the universities in the country. There are a lot of phenomenon prevails in different localities. So, the findings may be generalized in the context of rural phenomenon of the respondents but would not cover whole phenomenon of all over the country. Yet, it is believed that it would bring a new insight in this regard.

Data presentation, discussion and findings

In the forthcoming sections, data have been presented and discussion have also been made accordingly. In addition, findings have also been stated in the section.

The study explored to know the status of ownership ICT gadgets which are very essential for virtual teaching learning activities at the tertiary level in the country. In the following figure shows the status of ICT gadgets of the respondents.

Access to Android Phone or Laptop or Computer

About 100% respondents have their own Android phone but not update. Many of them have Laptop or Computer. Those who have not their updated device were unable to join virtual classes properly.
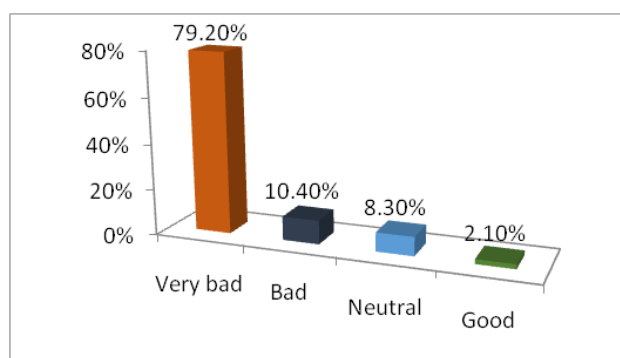
Internet Connection of Respondents
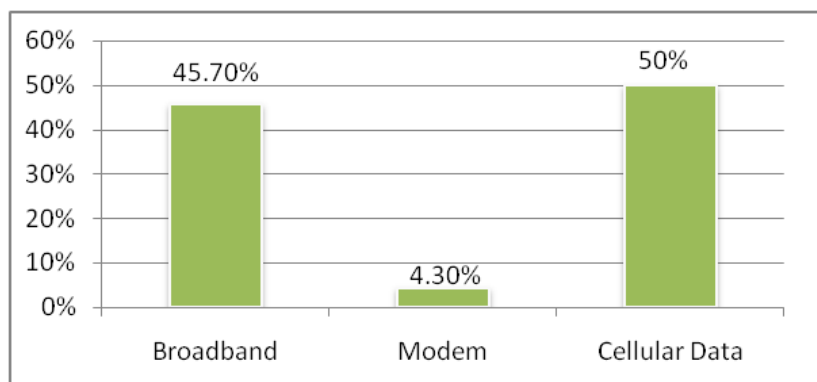
Figure 1: Internet Connection of Respondents

Fig-1 shows that most of the respondents use cellular data for internet browsing. A few of them use broadband and modem for internet browsing.
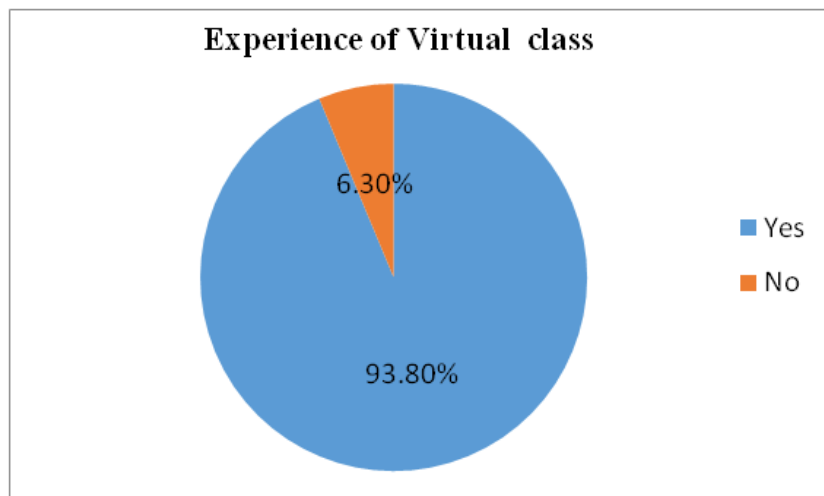
Internet Quality

Figure 2: Internet Quality

Fig-2 presents that the quality of internet is very bad. According to 79.2% students, internet quality is very bad and 10.4% students said it bad. Only 2.1% students express that the quality of internet is good. 8.3% students express their opinion as neutral.

Experience of Virtual class

Figure 3: Experience of Virtual class

Fig-3 shows that 93.8% students have experience of virtual class and 6.3% have not. From this above mentioned statistics it can be said that most of the students have experience of virtual class. Most of the students who had attended online classes had attended using Zoom App through mobile phone.
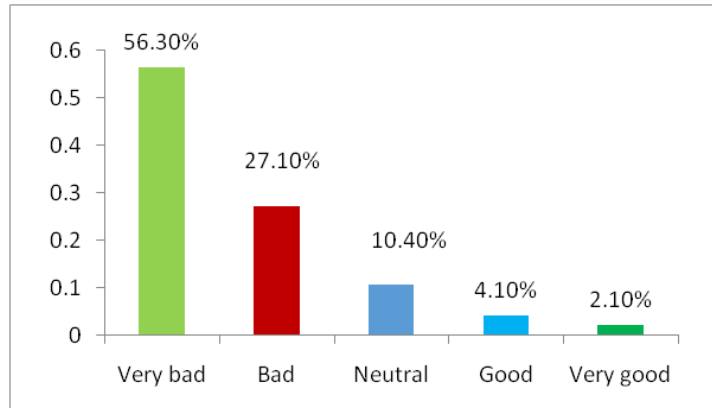
Condition of virtual class
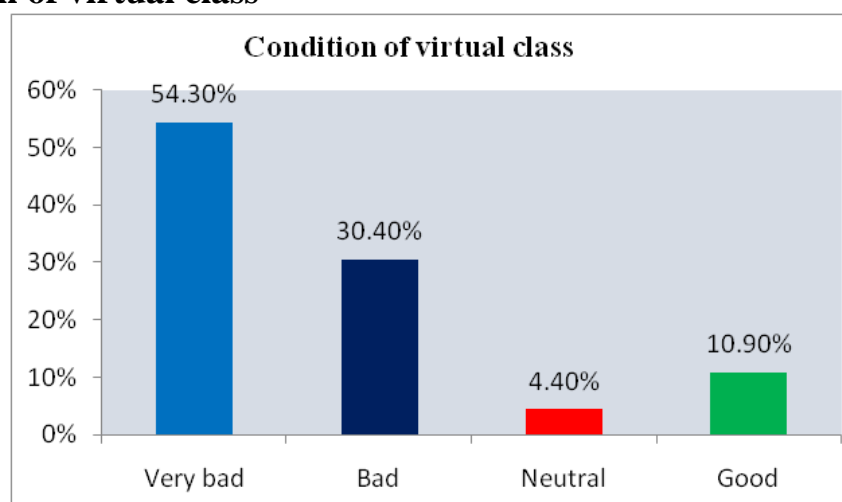
Figure 4: Condition of virtual class

Fig-4 express that the condition of virtual class is very bad. 54.3% students said it very bad and 30.4% told it bad. Only 10.9% students' stated that the condition of virtual class is good and 4.4% student remains in neutral position.

Satisfaction of the respondents

Figure 5: Satisfaction of the respondents

Fig-5 shows that most of respondents are not satisfied with the virtual class that they are facing now. Satisfaction of 56.30% students is very bad and 27.1% say this bad. Only 4.1% students said that quality of virtual class is good and according to 2.1% students it is very good. And 10.4% express their opinion as neutral.

ICT Support by Department for virtual Class
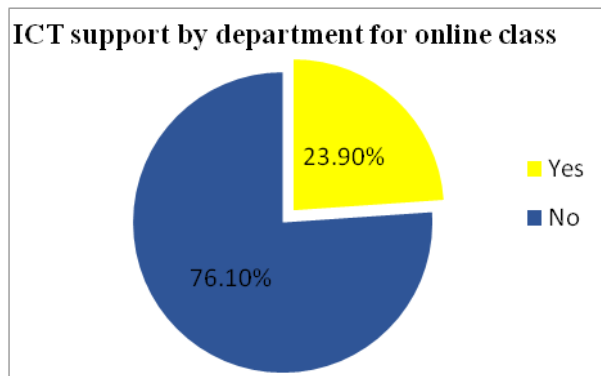
Figure 6: ICT Support by Department for virtual Class

Fig-6 shows that departments do not provide any ICT equipment to the students for online class. 76.1% students expressed their expression negatively. But according to 23.9% students, departments provide ICT equipment for virtual class.
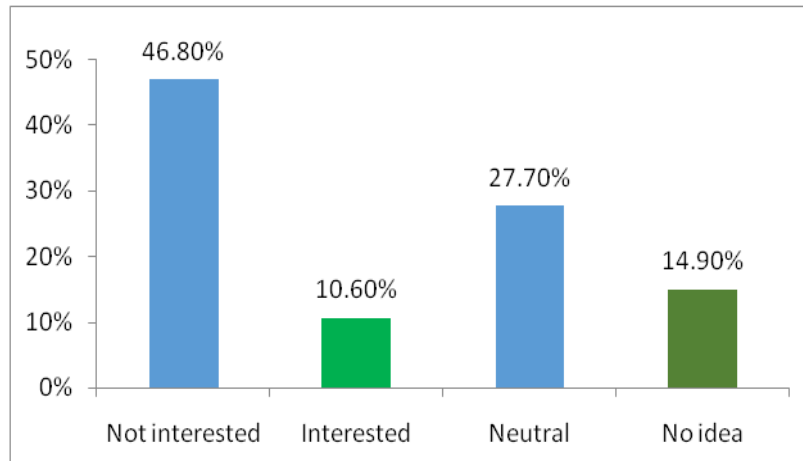
Students Interest in Online Class
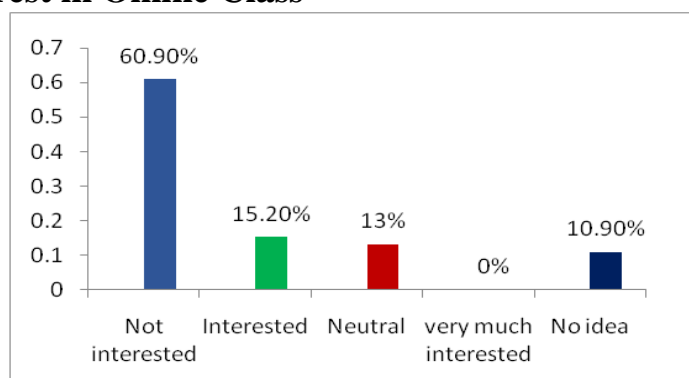
Figure 7: Students Interest in Online Class

Fig-7 shows that most of the students are not interested in online class. The number of such students is 60.9%. Only 15.2% students have interest in online class and 13% students remain in neutral position. Other side, 10.9% students have no idea in this case.
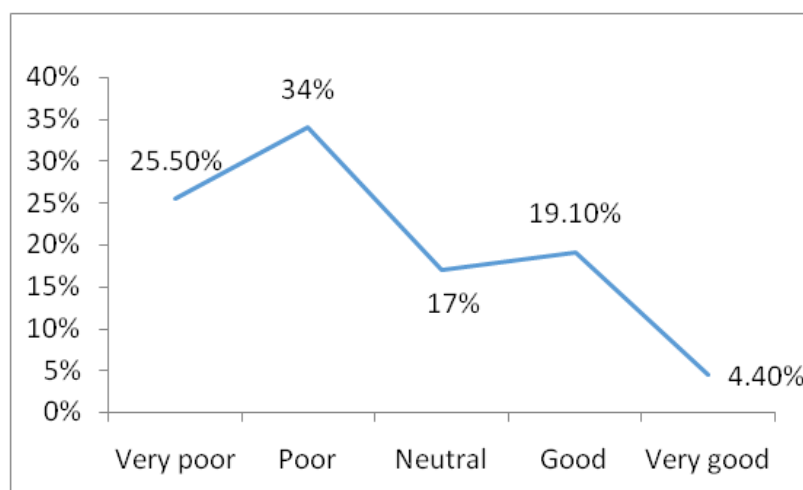
Teachers Interest in Online Class

Figure 8: Teachers Interest in Online Class

Fig-8shows that most of the teachers of the university do not have any interest in online class. Only 10.6% students are interested in virtual class. 14.9% students have no idea in this case and 27.7% teachers remain in neutral position to take online class.

Teacher's Efficiency

Figure 8: Teacher's Efficiency

Fig-9 shows that the efficiency of teachers is poor and the amount of such teachers is 34%. 25.5% teachers' efficiency is very poor. Only 19.1% teachers are good at technology and they are always active to take class. Among all teachers, the efficiency of 4.4% teachers is very good.

KII Data Presentation

For primary data, four KIIs have been conducted for this study. The gist of the KIIs is presented below:

According to the KIIs, the common challenges of virtual class are-disinclination of the students, limited knowledge of the teachers and student about ICT, lack of ICT management and miscommunication, lack of resources of the university administration and lack of ICT supported infrastructure etc. Some KIs mentioned that lack of updated device (Android Phone or Computer) as well as higher cost of data pack is the major challenge to run the virtual classes perfectly. Because of this reason, most of the students could not attend the online classes. Along with this, financial limitations in this pandemic situation had made it difficult for the students to buy data pack. Moreover, most of the students were then in their locality. The frequency of internet is very poor in the rural area. So, it was very tough to attend virtual classes for them. But, in some cases, UGC and University administration had taken some necessary steps to promote virtual learning and ongoing classes. UGC declared loan for the needy student to purchase Android mobile phone who have not as they will be able to attend the virtual classes. Some KIs said that UGC and the University authority should be more concern about this issue and should communicate with those students who have limitations and cannot attend the online classes. One of the KIs of science faculty mentioned, "Only theory classes are possible to conduct through online but not lab classes. It is one of the major challenge why the students losses their interest in virtual class."

FGD Data Presentation

For primary data, two FGDs have been conducted for this study. The gist of the FGDs is presented below:

In COVID-19 pandemic situation, face to face classes were not possible. So, most of the departments of the university are trying to conduct virtual classes in order to reduce the session jam. But there are huge limitations and challenges here. It was the very first time for the students to attend in virtual classes. They had lack of experience and proper knowledge. Besides, most of the students had not updated phone or computer. These phones were not suitable to attend classes due to their poor quality and features. But those who have updated device had attended in the online classes regularly. Another reason why the students could not attend the online classes is that the price of internet pack is so high. University authority as well as the departments did not take any remarkable steps to ensure the participation of all students in the virtual class. Some students mentioned that University administration have no proper ICT experts who can handle this situation.

**Challenges of virtual learning**

The study explored the challenges of the virtual teaching learning activities at the tertiary level in Bangladesh. The study reveals a number of challenges

to continue teaching learning activities virtually at the university level in the country. However, among the challenges, the major challenges are discussed below.

Higher Cost of Data Pack

It is one of the major problems for the students in Bangladesh. Most of the students of higher educational institutions in Bangladesh came from middle-class or lower middle class family. As a result, it is very difficult for them to afford internet easily because of its higher price. The affordability of the internet should not be a problem for many in Bangladesh. At BDT 59.27 or USD 0.70, the average price of a 1 GB mobile internet package in Bangladesh is one of the world's cheapest. But the cost of internet pack in Bangladesh is so high in the proportion of income. Many students, especially in low income households, may not be able to afford internet packages to avail online learning classes.

Lower Frequency of Internet
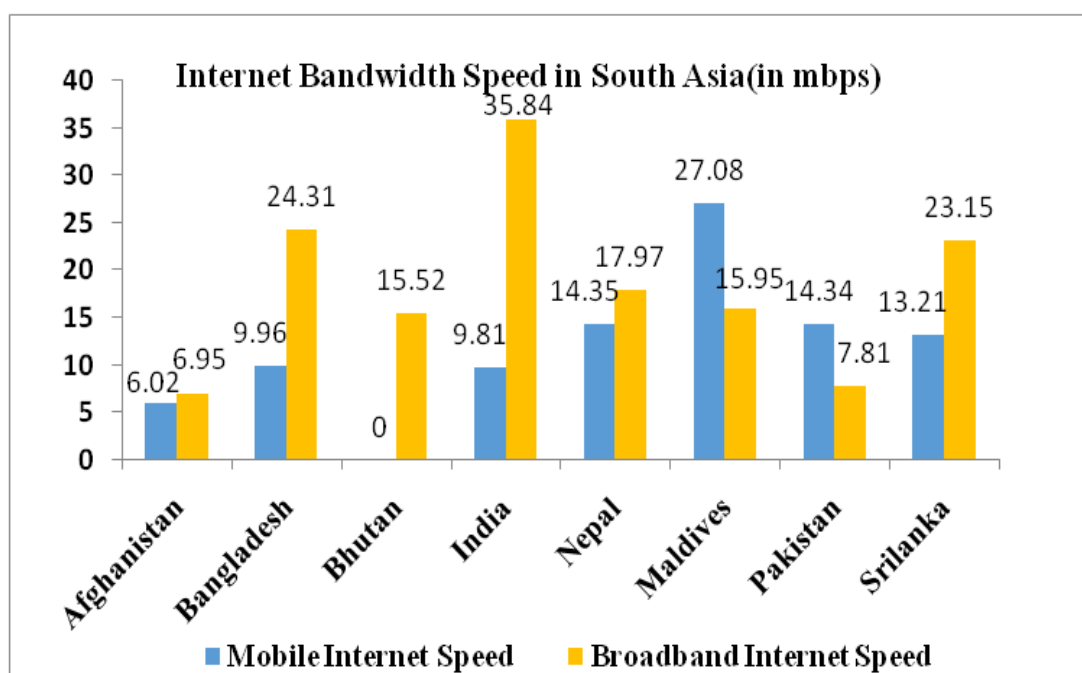
Figure 10: Lower Frequency of Internet

This is the main challenge to join the virtual classes. During the ongoing classes, suddenly the internet speed gets down slow. Concentration is also disrupted in class due to buffering. As a result, the students lost their interest to the class. Slow internet speed is an overall problem in Bangladesh. Although Bangladesh is far better than most of its regional counterparts, its broadband speed is low compared to global standards. Bangladesh ranks 96th out of 174 countries in broadband internet bandwidth in the speed test Global Index of April 2020. The same index puts Bangladesh in 130th out of 139 countries in mobile internet bandwidth. The internet speed makes it hard for accessing multimedia or virtual class.

Lack of Good Device

From the collected data it appears that almost 100% of the students have Android mobile phones. But most of them did not have updated phones. Currently, 4G network is available in Bangladesh but most of their mobile phones could not catch 4G network. Moreover, 4G service has not been launched in rural areas so far. Participation in online classes using 2G or 3G networks has become a complex issue. Many devices are not able to adapt to the network because they are not updated.

Sound Quality

This is one of the biggest problems that students had faced during the virtual classes. The quality of internet was so poor that created buffering at class time. Besides, the sound quality is also poor. The speech were not heard clearly by the students and they did not understand the class lectures well.

Lack of ICT Management and Miscommunication

Proper ICT management is very essential to conduct virtual classes. But the ICT management and communication skill are very poor in the tertiary educational institutions. Due to COVID-19 pandemic, the educational institutions have been closed since 17 March, 2020. As a result, most of the university students have been staying at home from then. It was very difficult to manage the students for virtual classes. University administration and most of the departments of the university could not communicate with every student for virtual classes. Besides, some of the teachers who take online classes could not make the education environment friendly and enjoyable. Inappropriate time set up was another challenge for the students.

Lack of Knowledge and Skill

Innovations in education sector could be possible by proper knowledge and skill of the teachers (Pelgrum, 2001). Lack of proper knowledge and skills of the teachers are considered as one of the major challenges to run virtual classes both developed and developing countries (M. A., 2009). Therefore, insufficient knowledge of technology and lack of skill in using technological equipment have also limited the use of technological instrument in virtual learning activities in Bangladesh.

Lack of confidence in using device

Most of the students did not have enough confidence in using computer, mobile phone and other devices. Many of the students in higher educational institutions are totally ignorant about the use of device. Many of them are not interested in virtual classes. Various kinds of problems such as poor internet connection, poor sound quality and buffering decrease their confidence to attend the virtual class. In many cases, teachers also did not have proper confidence to conduct virtual classes.

Unable to Take Lab Classes Through Online

Theory classes of the departments of science faculty are related to the lab classes. It is possible to take theory classes in online but not lab classes. As a result, both teachers and students are losing interest in online classes. Teachers are also not able to present the theory classes to the students properly. There are many subjects in the theory class that are explained through practical experiments in the lab class. But that has not been possible since the introduction of online classes. As a result, the students of the science faculty are losing interest in the class.

Unsupported Infrastructure and Limited Resources

Bangladesh is a developing country in that have a limited resources and inappropriate infrastructure to implement ICT in education. The supply of electricity is not enough in the rural areas of Bangladesh. As a result, one cannot run a computer comfortably. On the other hand, electricity supply in the rustic area is very unsatisfactory. Available electric supply promotes the development of the ICT infrastructure. Besides, up-to-date hardware and software must be needed for using the advantage of ICT. Using up-to-date hardware and software resources is a key feature in the diffusion of technology (Gulbahar, 2007). The internet connection with high speed is another condition for the integration of ICT into the teaching learning activities. But, unfortunately internet speed is very slow here. Sufficient resources and ICT supported infrastructure for the application of technology in education in Bangladesh is absent.

Insufficient Fund

Sufficient fund must be needed for conducting virtual classes smoothly. But the government of Bangladesh have a limitation to allocate sufficient fund to the higher educational institutions for managing ICT tools needed for virtual classes.

Lack of Training Facilities

There are no particular e-learning institutions and facilities in different Teachers' Training Institutes in Bangladesh. Both the teachers and the students in this country try to develop their capabilities and skills individually or by their own effort. Very few are following standards at the time of preparing learning materials like power point slides or web pages.

Lack of Qualified ICT Coordinators

Teachers face many difficulties when they take virtual classes. They also face various kinds of technical problems. In order to overcome this challenge, qualified ICT coordinators must be needed. Higher educational institutions have not enough qualified ICT coordinators who will assist teachers to integrate ICT in classroom and lab and favorable school culture (Lim, 2002).

Corruption

Corruption is an uncontrollable situation in Bangladesh. It is so pervasive that it has evoked widespread condemnation, both inside and outside the country (Zafarullah & Siddique, 2001). Consequently, Bangladesh has been consistently ranked by Transparency International as one of the most venal among the researched countries (Bhuiyan, 2011). So it could be identified as one of the strong barriers to the implementation of ICT in education. The misuse of government funds could have been used to develop other sectors like the integration of ICT in education is propagated in the other directions. A few of people benefited from those funds by pocketing the money (Kessy, Kaemba, & Gachoka, 2006). Corruption is also very acute in the higher educational institutions. The authorities of the universities are failed to allocate government resources properly.

Recommendations

It is positive that higher educational institutions and government come forward to dispute the challenges mentioned above. Some of the recommendation that can be taken are listed below-

- Government should raise available fund for the institutions of tertiary level to increase the standard of virtual education.

- The University should supply gadgets them who don't have one by giving loan to them and to ensure data package with high internet speed. The speed of internet should be increased by informing government and the mobile operator company.

- The University administration should create a dedicated IT group who always will be ready to help the teachers who conduct virtual classes.

- The speed of Internet should be increased by informing mobile operator company through government.

- University administration should arrange ICT training for improving skill and capacity of the student.

- The narrowness of the teachers should be removed in the sphere of using technology for conducting virtual class and they have to be positive about it.

- Misuse of resources and corruption should be removed from the institutions.

Conclusion

Technology based education has brought about unprecedented change in Bangladesh. In order to attain the cherished goal of "Vision 2021", ICT based education must be needed. By the by, ensuring technological development is also an important concern for government to prove Bangladesh as a developed country by 2041. To meet this goal, modernized

education system can play a vital role. As the days go by, education in Bangladesh is being beautified by modern technology. As this change has made the work of students and teachers easier, it has also been able to create a better learning environment. Along with increasing the quality of education, virtual education activities have also become popular in Bangladesh. Students will be able to participate in classes while sitting away. Even in this COVID-19 situation, educational activities do not stop. But students are facing various obstacles while participating in online classes. As a result, educational activities are disrupted significantly. If these barriers can be overcome through the joint efforts of the government and the university administration, online education activities will be further accelerated (Pajo & Wallace, 2001).

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