Challenges of Online Education in Rural Bangladesh during COVID-19 Period:

Perceptions of Higher Secondary Teachers and Students

By

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the requirements for the degree of
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Declaration

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Approval

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Abstract

Because of the existing COVID-19 pandemic, teaching-learning pedagogy of Bangladesh has seen a drastic change. As far as education is concerned, it has been shifted from physical classrooms to virtual platforms like *Facebook*, *zoom*, *google meet* etc. To ensure expected pedagogical outcome, it is significant to bring adequate changes in teaching-learning methods as per the demand of the new context (Ko & Rossen, 2010). However, some studies report that it becomes challenging for the teachers and for the students to adapt to the new context and to implement and practice the required changes in online education (Kebritchi, et al., 2016). Hence, this qualitative study aims to explore the precise voices of the teachers and the students of rural colleges of Bangladesh regarding the challenges they face in availing online education. The study explores that teachers face challenges in using technology as per the pedagogical need, in designing appropriate content and materials for online class. Also, teachers struggle to build up efficient classroom-communication with the students and to ensure quality assessment method. Moreover, students struggle to participate in online class because of not having required digital devices and better internet service. They face difficulty to understand online lecture, to adapt to the new environment, to have communication with teachers, and to take online exams. Also, some of the expectations and suggestions of the stakeholders regarding making online pedagogy efficient have been documented through this study. The researcher believes, this study has efficiently documented the predominant challenges and needs of online teaching-learning in rural Bangladesh and this documentation will help the policy makers to take precise context based measurement to make teaching-learning most efficient.

Keywords: Online pedagogy; challenges; digital divide; materials design; technological pedagogical content knowledge; communication barrier; assessment methods

Dedication

This study is dedicated to all of the teachers who have been working tirelessly to make online

teaching-learning pedagogy successful.

Acknowledgement

Firstly, I express my deep gratitude to almighty Allah, *Alhumdulillah!* I am also thankful to my parents and to all of my teachers for their tremendous support throughout my personal and academic life. Precisely, I would like to express my gratitude to Dr. Asifa Sultana. Her supervision, support, guidance, and tolerance have helped me throughout the journey of writing this thesis. Lastly, I would like to appreciate the time and support of all the participants of this research, without the support of the participants- a researcher is nobody.

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List of Acronyms

DT   Digital Technology

LSES   Low Socio-economic Status

TPACK   Technological Pedagogical Content Knowledge

Chapter 1

Introduction

1.1 Introduction

Advantages of blended learning- the way it serves to increase the efficiency of mainstream face-to-face learning, have been discussed in an ample amount of research articles (Kaur, 2013; Tosun, 2015). Nonetheless, distance learning has not been able to satisfy the expectations of policy makers and curriculum developers as of a mainstream education platform since it has been researched that with having inadequate pedagogical and technological supportive tools- a complete dependence on online teaching-learning would increase inequalities between learners with different socio-economic background (Park, 2017).

However, the spread of COVID-19 pandemic has forced almost all the governments of the world to shut down all possible institutions to avoid social gathering to prevent the spread of the virus. Following to that, with the closure of the educational institution for months, availing traditional face-to-face education has not been possible. Hence, until the institution can resume their regular service, having no other better alternative available, most of the countries have adapted online teaching-learning as of a medium of mainstream education. Additionally, as far as online teaching-learning is concerned, four major facilities, namely, accessibility, flexibility, cost-effectiveness and efficient learning quality- have to be available to ensure that online teaching-learning serves adequate benefit to the stakeholders such as teachers and students (Oliver, 2001). However, with such unexpected enforced switching from traditional face-to-face class to online class, has it been possible to ensure the maintenance of all these four features? Studies say, such unexpected transition have caused the teachers and students to face unprecedented challenges (Rajib et al., 2020). For instance, teachers are forced to design new materials and to revise their teaching philosophy and method to take virtual classes. Moreover, students are facing new challenges to participate in online education. Availing technological support, investing more money, getting habituated in listening to on-screen teacher- are the challenging issues from the learners' end.

Hence, to help the process of pedagogical adaptation to this new context, it is indispensable to explore the voices of on-field stakeholders like instructors and learners. Teachers and students are the significant stakeholders whose experiences and suggestions would help to make teaching-

learning pedagogy an effective one. Therefore, this study aims to find out the answers to the following questions.

1.2 Research Questions

a) What are the technical and pedagogical challenges that rural college teachers of Bangladesh face while conducting online class?

b) What are the challenges that the students face in availing online education?

c) What do the teachers and the students expect from the concerned authorities to address these challenges they have been facing?

1.3. Context and Reasons of This Study

1.3.1 Lower Socio-economic Status of Rural Bangladesh

If the impact of socio-economic status on education is analyzed, even in the remote areas of developed countries like Australia and New Zealand, it is evident that lower socio-economic conditions could be a hideous factor in the process of availing quality education (Delvin & O'Shea, 2012). Also, some other studies done to explore the perspectives of students from lower socio-economic background, reveals that students from low socio-economic status (LSES) backgrounds face more challenges than of students with high socio-economic status background (Devlin, 2013). For instance, Collier and Morgan (2008) explains that since a mentionable number of LSES students are the first in their family to avail education, hence, they get less support from their family as their family are not well known to the challenges that come in the process of learning. To add, not only in the remote areas of developed countries but also in the rural areas of developing countries, the negative effect of lower socio-economic status on education is present in a dominant manner (Rao et al., 2021). In the researches, precisely done in the context of Bangladesh, it has been claimed that there are severe presence of inequality regarding the quality of education in the urban and in the rural areas of Bangladesh. For instance, it has been studied that as far as ensuring acceptable standards for educational requirements and amenities are concerned, the urban institutions have shown comparatively better performances (Rahman et al., 2016). Also, implementation of any new policy to ensure quality education in the rural areas has been proved

to be a challenging task due to poverty, remoteness, infrastructural inadequateness, gender inequality, and cultural barriers (Begum et al., 2019).

1.3.2 Having No Experience in Technology Based Pedagogy

Moreover, if the pre-COVID 19 context of online education in Bangladesh is taken into account, there has not been any mentionable instances of practice of online education or of blended education in the country (Islam & Selim, 2006). More precisely, there has not been any practice of online education in the mainstream education of Bangladesh. Let alone online learning, in the rural areas of Bangladesh, implementation of NCTB-prescribed multimedia based lesson could not be practiced due to contextual challenges such as infrastructural weakness and due to lack of skills of the instructors (Ahmed, 2016; Sarowardy & Halder, 2019). Hence, it is understandable that the concept of online education emerged as a totally new approach of education in Bangladesh. All the stakeholders of the pedagogy have been forced to get involved in the process without prior exposure and knowledge.

1.3.3 Presence of Digital Divide

Moreover, sudden introduction of online education with all these evolving challenges and with inadequate contextual support exemplify the issue of "digital divide". An ample amount of studies depict the impact of digital divide on education (Sohel et al., 2021). Studies mention, digital divide creates unfair division as far as availing quality education is concerned. For instance, Tarman (2003) mentions that in the process of digitalization of education, wealthy citizens get more opportunity to ensure quality education for their children than of the citizens with lower income. Hence, the introduction of online education during the COVID-19 period has exposed the presence of digital divide in educational fraternity of Bangladesh as it has been mostly helping the urban-wealthy citizens of the country (Aziz et al., 2020).

1.3.4 Exploration and Documentation of the issue from the Precise Context

Thus, the existing studies mentioned in the earlier sections of this research exemplify that in comparison with the urban educational contexts of Bangladesh, the rural pedagogical contexts of Bangladesh have always been the underprivileged spectrums of educational pedagogy where quality of education could not be ensured due to the challenges mentioned in the earlier discussion. In relation to this notion of ensuring quality education in remote areas of Bangladesh, in

researchers' view, it has been a predominant concern to explore how the rural context response to this new challenge of implementing online education during COVID-19 period. Following to that, without only sticking to the studies (Kebritchi et al., 2017) that have discussed similar sort of issues in a more overgeneralized manner, with the representations of the voices of precise audience from the precise rural pedagogical context of Bangladesh, this research has kept its' focus only on the "rural" college teachers and students to explore, examine and document the challenges they have been facing in availing online class.

Chapter 2

Literature review

In this section, the researcher tries to follow up some of the existing research in the relevant field. Based on the findings of the existing research, the following sections aims to depict the effects of COVID-19 in the teaching-learning pedagogy, the technical and pedagogical skills required for teachers to conduct online teaching.

2.1 Effect of COVID-19 in the Teaching-learning Pedagogy

It is evident that the outbreak of COVID pandemic has affected the teaching-learning process significantly. This section of the literature, referring to a number of recent studies, aims to discuss some of the prominent effects of COVID-19 pandemic on teaching-learning pedagogy. First of all, to secure the lives of related stakeholders like students, parents, and teachers, all of the educational institutions stopped operating physically. It has been explored that the prime impact of the pandemic is that it has forced the stakeholders to switch the mood of teaching-learning from physical to online (Mishra et al, 2020). Studies report, such transition has been challenging the stakeholders as it has been presenting evolving context to the stakeholders as far as teaching-learning is concerned.

If the point of views of the teachers are taken into account, they have been facing multi-dimensional challenges as far as practicing in online class is concerned. First of all, online classroom practice during the pandemic creates dilemma in teachers mind as they are not confident enough regarding whether the needs of the students can be met through distance learning (Flack et al., 2020). Such scenario is a reflection of teachers' lack of confidence regarding their students' ability to learn from distance and regarding their own ability to teach the students from distance.

Moreover, the new context of online teaching has forced the experienced teacher to feel like novice teacher (Day et al, 2020). Hence, from such statement, it can be understood that the amount of additional skillsets required to conduct online class are significantly new to the teachers. For instance, the first and foremost skill required to take online class is technological skill (Flack et al., 2020). A teacher must know the pros and cons of different platforms available to conduct online class, and based on his own classroom needs, he must be able to select the best platform to ensure expected teaching-learning outcome. It has been studied that to be successful in digital

pedagogy, an instructor must have the required understanding of the use of available technology to bring adequate adaptation, modification to make online teaching-learning effective by enabling enhanced opportunity for the relevant stakeholders (Pelz, 2010).

To add, the predominant impact of the pandemic on teachers has been that it forced the teachers to modify the existing materials and lesson plan in a drastic manner to adapt it as per the requirements of online class. Flack (2020) mentions, "The teacher's main obstacle is to learn how to chunk material effectively, and what delivery methods are available, and how to use them to best advantage—how to introduce variety into lessons, with the view to keeping students engaged and learning focused."

Moreover, teachers of 'hands on' subjects have expressed frustration over the effect of COVID-19 pandemic on teaching-learning. According to them, distance learning has not spared any scope of practicing teaching-learning as far as conducting practical session are concerned. It has been explored that complicated first hand investigations cannot be conducted efficiently through distance learning (Arkorful & Abaidoo, 2015). For instance, institutions which deal with practical subjects and career training such as medical science and automobile engineering- have been under severe threat as teaching-learning of such subjects are not possible through distance learning.

In addition, teaching-learning pedagogy has suffered significantly as far as establishing efficient teacher-student communication and conducting assessment are concerned. In most of the cases, it has not been possible to establish successful communicative environment which is required to ensure expected teaching-learning outcome. Studies say, teachers have faced deliberate pressure to provide instant feedback to the queries and concerns of the students and it has not been possible for the teachers to meet the needs of all the students (Fedynich, 2013). Additionally, COVID-19 pandemic has challenged all the policy makers and the teachers to facilitate efficient assessment policy for the learners.

The impact of COVID-19 pandemic on students has been considerably challenging. Students have been facing difficulties in attending virtual classes. In other words, online learning cannot meet students expectations as both the teachers and the students are not prepared to perform in the given new platform. First of all, learning has become much more dependent on technology. Instead of looking into the pages of books, students are forced to keep looking at the screens of smartphones or computers to attend online classes. It is difficult for students to get used to with such technology

and to participate without any help and preparation. Also, students who learn better in an interactive and communicative environment, they are no longer facilitated with such opportunity (Arkorful & Abaidoo, 2015). Person to person interaction with teachers are no longer possible, hence, lack of learning is taking place due to insufficient feedback (Arkorful & Abaidoo, 2015).

2.2 Technical Competencies Required to Participate in Online Class

2.2.1 Technical Competencies Required for Teachers

As far as conducting online teaching is concerned, being proficient in technical platforms is a must to bring the expected teaching-learning outcome. Some studies indicate that attrition rates for online courses are often much higher than regular face-to-face campus-based courses (Tyler-Smith, 2006). The reason behind such higher attrition rate is students' attitude towards the performance of a teacher in an online class. According to research (Yeung et al., 2011), teaching in a technology-based setting becomes complicated when the concerned instructors do not possess the required set of skills and relevant competencies to make the teaching-learning process efficient. If the current context is considered, *zoom* and *google meet* have been two of the most used platforms to carry out online teaching-learning. Without having knowledge of using such platforms, a teacher cannot plan a lesson, cannot design needed materials. However, research (Shohel & Power, 2010) shows, a mentionable number of rural college teachers in Bangladesh are unable to use these technologies as these are new to them, and some of the teachers have never ever imagined to be in such a context where they would be forced to use such platforms. Hence, it is important to know their voices regarding their struggle in conducting online classes. Other studies conclude that instructors' technological knowledge affects the success rate of an online class predominantly (Yeung et al., 2011). Also, Kessler & Plakans (2008) explain that the sense of competence in Digital Technology (DT) of an instructor has significant associations with his or her views regarding DT and regarding implementation of DT in classroom. Hence, enhancing teachers' skill in applying DT in teaching-learning pedagogy can be significantly supportive to ensure expected teaching-learning outcome.

2.2.2 Technical Competencies Required for Learners

It is understandable that considering the aspect of learners' readiness is one of the most fundamental issues in availing online pedagogy (Hung et al., 2010). Following to that, learners'

ability to use the technical platforms to avail online learning should be evaluated. It can be summarized from several researches that when the medium of communication is not comprehensive and comfortable to the students, expected teaching-learning outcome cannot be obtained (Sherry, 1996). According to some researches, students find it uncomfortable and struggling to attend online classes as they are not used to communicate with the teachers through virtual platforms. Identifying the technical skills that learners require to have and being adapted with these become challenging for the students (Kebritchi, et al., 2016).

2.3 Pedagogical Competencies Required to Conduct Online Class

2.3.1 Pedagogical Competencies Required for Teachers

As the context of physical classroom and virtual classroom are different, hence the pedagogy has to be adapted accordingly (Sepulveda-Escobar & Morrison, 2020). If it is considered that all the teachers have been efficient in applying teaching methodologies in the physical classroom, however, that does not mean they would be successful in applying those methodologies in online classroom. Study says that the pedagogical aspects of an online class demands context specific, time and technology appropriate lesson planning. Hence, a blend of technology and pedagogy is expected from an efficient teacher to fulfill teaching-learning objectives (Shohel & Banks, 2012). For instance, as technology cannot allow the stakeholders to access to all the features of a physical classroom, hence, lesson planning and materials design is predominant for a teacher. Because of having poor internet connection, when some of the students cannot afford visual participation in an online class and they only depends on audio or on the voice of the teacher, a teacher cannot solely depend on using visual teaching materials only. He must think of designing material for the audio depended learner as well. However, how many rural college teachers of Bangladesh are able to do all these? Hence, it is immensely significant to assess their voice to find out their struggle in conducting online classes and to provide solution to those.

2.3.2 Pedagogical Competencies Required for Students

Being a part of new medium of classroom communication and content input, learners also require to have more conscious, self-driven, and informed attitude towards online classroom procedure. Hung et al. (2010) discuss five readiness dimensions to assess and support the learners regarding online classroom participation. In addition, it has been studied that learners may not get all the

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components of a physical classroom in an online classroom, hence, they may need to rewire their pedagogical expectations for an online class. For instance, An and Frick (2006) research that the audio-visual and physical learners may find the lessons of online classroom challenging as the lessons may miss activities and tasks that they prefer to practice to learn a new item.

2.4 Relevant studies in Bangladesh

With the emergence of COVID-19 pandemic, researchers have concentrated on the issue of implementation of online education in Bangladesh. There are several researches which discuss on the challenges and opportunities of online teaching-learning in primary, secondary, and tertiary levels of education in Bangladesh. For instance, a study has depicted the perceptions of the university teachers if they think students do face problem in online class. The responses of the teachers reveal that around 91% of students have faced challenges in attending online class. The two major areas of challenges have been poor internet connection (69.31%), and lack of logistic support (19.13%) (Tabassum et al., 2021). Also, the study reveals, a mentionable number of students think the online education has not been helping the pedagogy to overcome the educational gap (Tabassum et al., 2021). Moreover, studies which deal with students' perception regarding online pedagogy, claim that the responses of the students represent that limited access and high cost of internet, unobtainability of electronic devices have caused them to remain absent in online classes (Dutta & Smita, 2020). Also, Sifat (2020) mentions, students have been under tremendous anxiety, depression, and self-harm as they practice social distancing and self-isolation due to COVID-19. Also, the financial instability issues of students' respective families have been one of the fundamental sources of such depression (Sifat, 2020). Moreover, Shrestha et al. (2021) claim that lack of technological skills from both teachers' and students' end has been a predominant reason behind the failure and inefficiency of online pedagogy in Bangladesh.

Chapter 3

Research Methodology

3.1 Research Design

Qualitative research method has been followed to conduct this study. By following this research method, the researcher represents the voices of the participants regarding the challenges they face in technical and pedagogical spectrums while conducting and attending virtual classes in the concerned context. The researcher believes, with an investigation of the 'why and how' of the concerned issue through observing and interviewing the subjects with sufficient time, a qualitative study approach has helped him to find out the adequate in-depth perspectives of the participants.

3.2 Participants of the Study

Higher secondary level education context of a remote area of Bangladesh during COVID-19 period has been the precise attention of this study. For this study purpose, the institutions have been chosen randomly from three to four diverse areas of that remote upazila. Firstly, Kandirpar Govt. College is located at the center of the upazila. Secondly, from the center of the upazila complex, to reach to Gazipur Govt. College and Rajapur Degree College, it takes about twenty to twenty-five minutes of auto-rickshaw ride. And, the last institution, namely, Barasar Model College is situated at the border of that upazilla.

Moreover, the student's age is between 16-18 years old. The participants have been selected randomly. In all of these institutions, more than 350 students have been studying in second year. And, out of all these 350 students, only 08 students have been selected randomly for the research purpose.

In addition, eight teachers have been interviewed to conduct this study. All of the teachers who have participated in this study are from the colleges aforementioned. They teach different subjects like Bangla, English, Mathematics, Physics, Biology and Chemistry. They are of different age and they have different levels of teaching experience.

On a relative note, the researcher would like to clarify the reason behind dominance of male participants in this study. As the data collection procedure happened during the COVID-19 period, it had been a rigorous task for the researcher to collect data. The researcher approached more than

50 potential participants (both male and female teachers and students), however, only a few of them agreed to participate in the study. The pandemic context did not allow the researcher to request any potential participant twice to sit for the interview as most of them expressed doubt whether they would be able to maintain social distancing and health consciousness. Also, considering the socio-cultural phenomenon of a remote area of Bangladesh, the potential female participants were shyer and reserve in meeting an unknown male person (the researcher).

3.2.1 Sample List of the Participants

Table 1. List of participants (Teachers)

Sl	Name	Institution	Gender	Age (in years)	Subject	Experience
1	Mr. BRI	Barasar Model College	Male	49	Math	15 years
2	Mr. NSM	Barasar Model College	Male	35	Bangla	7 years
3	Mr. FRD	Gajipur Govt. College	Male	38	Physics	9 years
4	Mr. GIS	Gajipur Govt. College	Male	29	Biology	2 years
5	Mr. KML	Kandirpar Govt. College	Male	43	Biology	11 years
6	Mr. ISM	Kandirpar Govt. College	Male	37	Chemistry	7 years
7	Mr. RJU	Rajapur Degree College	Male	31	English	3 years
8	Mr. KDR	Rajapur Degree College	Male	39	Biology	9 years

Table 2. List of participants (Students)

Sl	Name	Institution	Gender	Age (in years)	Group	Device he/she uses to attend online class
1	NLA	Barasar Model College	Female	17	Science	Laptop/Smartphone
2	ARF	Barasar Model College	Male	17	Business Studies	Smartphone
3	TJR	Gajipur Govt. College	Female	18	Business Studies	Smartphone

4	RKB	Gajipur Govt. College	Male	17	Humanities	N/A
5	RSD	Kandirpar Govt. College	Male	17	Humanities	Smartphone
6	HNA	Kandirpar Govt. College	Male	18	Science	Laptop
7	RJB	Rajapur Degree College	Male	17	Science	Smartphone
8	HBB	Rajapur Degree College	Male	18	Science	Smartphone

3.3. Data Collection Procedure

The researcher has collected data from the interviews of the participants and by analyzing the required documents.

3.3.1 Interviews

Due to the pandemic context, though it has been a bit challenging for the researcher to interview the subjects. Nonetheless, in between November, 2020 to April, 2021- face to face interviews have been conducted in several phases. The average duration of teachers' and students' interviews have been of 30- 40, and, 20-25 minutes respectively. Interviews have been of semi-structured format and some 10-12 basic open-ended question have been asked to the participants. Moreover, in demand of any specific circumstance, required follow-up questions were asked to the interviewees. The key responses and the significant utterances of the interviewees were noted down by the researcher. As the participants of the study did not agree, the researcher did not record the interview sessions electronically.

3.3.2 Document Analysis

To cross-examine the claims of the teachers and the students that materials provided for physical class are not compatible and efficient in online teaching-learning context, the researcher analyzed some documents such as the relevant text books prescribed for the college students.

3.4 Data Analysis

The researcher has applied thematic data analysis method to analyze the data of this research. Firstly, the data have been transcribed and processed. After that it has been easier for the researcher to group the data based on several themes. In this way, the researcher has sorted the data by focusing on the themes and by disregarding the other additional responses of the participants.

Based on the responses of the participants, the themes have been chosen in accordance with the focus of the research. Hence, with the help of theme-based discussion of the responses of the participants, this study has been able to answer the research questions.

3.5 Ethical Consideration

Consideration of ethics has been one of the predominant priorities in this research. First of all, the context and the reasons of the study have been informed to the participants before they agreed to participate in the interview. Moreover, the researcher has been concerned about the information he mentioned in this study. Without degrading the quality and the authenticity of the research, the researcher has shared the required and the relevant information. Also, before conducting the interviews, all of the participants have been informed that none of their identity, their given information or statements will be disclosed in such a manner that might harm the participants. For instance, to have discussion on the participants, the researcher has used pseudonyms of the participants and of the institutions. Secondly, the researcher, by any means, has not forced or enticed any interviewee to provide any response in any way with which the interviewee disagree. Moreover, the researcher has been concerned about not to hurt or dishonor any participants by any means of behavior, posture or gesture. Participants like students and teachers were from different institutions and from various backgrounds, hence, the researcher was rigorously concerned about not to disrespect anybody.

Chapter 4

Findings

4.1 Teacher's Perceptions: Challenges They Face in Conducting Online Class

According to Syverson and Slatin, online education has been challenging for the teachers because of the severely changing role of the instructors (2010). In this section, the voices of the rural college teachers which have been cumulated from the interviews would be discussed.

4.1.1 Challenges with Technology

The technological platforms that are used to conduct online class, appear to be a challenge for the instructors. For the time being, if the relationship with the technology and pedagogy in a classroom setting is disregarded, if only the smart devices and software management ability is considered, some of the college teachers find it difficult to carry out a particular task through smart digital devices and softwares. The response indicates (table 1) that older teachers have suffered more in using digital technology. For instance, Mr. BRI, a teacher of Barasar Model College who is experienced in teaching Math for more than fifteen years says, "I have never ever thought of being in such a situation where I have to teach math through a virtual platform. As you understand, we did not have the opportunity to get used to these digital devices and applications during our time. Now, adapting to these new context is challenging for teachers like me". When he is asked what sort of challenges he has been facing? His reply becomes identical with the response of Mr. KML, a teacher of Kandirpar Govt. College. According to them, it takes time to being used to the functions of an application like *Zoom* or *Google meet*. "I cannot respond to the context immediately. I understand what I need to do but finds it difficult to carry out"- says Mr. KML. Agreeing to such statement, Mr. RJU, an English teacher of Rajapur Degree College says, "Yes, it is challenging to take care of a lot of things at a time. Sometimes you speak for 10-15 minutes and then find that the speaker was not unmuted! Even the settings of sharing the screen has been troublesome for me". In addition, Mr. BRI says, starting from the software installation to opening a *zoom* id, he asked for the help of his daughter who is a university student. Hence, from the voices of the teachers, it is clear that teachers have been struggling with the technology to use it in pedagogical context.

4.1.2 Struggling with Internet Connection

Though most of the teachers complain about their struggle to adapt to the digital platforms, however, there are some exceptional cases as well. According to Mr. GIS, he has not had much problem in using the digital platforms. Rather, he has been suffering more from internet connectivity issues. According to him, "internet connectivity has been a tormenting aspect in his online teaching experience". As there is no broadband connection available in the region, teachers need to rely on the mobile data. Now, most of the mobile operators do not serve any high speed data transmission facilities such as 4G or 3G. Though some of the operators offer 4G or 3G services, teachers add the phrase "so called" before talking about such services. According to Mr. KDR, a Zoology teacher of Rajapur Degree College, "Internet connection keeps buffering. As long as we all are in audio mood, classes can be taken listening to the voices of the students at least. However, it is not possible to take a class just only based on audio input". Mr. KDR says, "Sometimes I need to share the screen with my students, the problems starts then. Students cannot see or understand whatever I share in my screen because either it does not appear due to buffering or even if it appears it remains blur". Moreover, Mr. FRD, a Physics teacher from Gajipur Govt. College shares a severe challenge regarding the internet connectivity issue of online teaching. He asserts, "Due to internet buffering, in case of some region, it is not even possible to take the class based on the audio input. Students complain that my voice gets incomprehensible, distorted, robotic and choppy. When you receive such complains that you do not have any solution to, it is frustrating".

4.1.2.1 An Alternative Approach

As the two-way communication platforms like *zoom* or *google meet* do not work in the context, teachers of some institutions moved to one-way communication platform like either teaching through conducting Facebook live session or through uploading recorded lecture. Though the live sessions of Facebook class do not solve the difficulty of internet connection disruption, however, the recorded class has been helpful in this regard. As Mr. KML explains, "though, to some extent, the problem of internet disruption has been sorted out, nonetheless, the quality of teaching-learning still remains under question in this platform of one-way communication". As real-time communication between teacher and students cannot be performed in this way, teachers remain in darkness regarding the questions and quarries of students. Another question was asked to the

teachers that in Facebook, there is opportunity of commenting under the video uploaded as recorded lecture, why the teachers do not take that as an option to communicate with the students? In response to the question, the teachers claim that if the rate of participation in those recorded class is analyzed, it appears that students do not enjoy those recorded classes. The reason could be that the students feel and consider the classes as artificial and mechanical. Moreover, even if some of the students try to communicate through commenting, it is not always possible for a teacher to provide immediate response. And, unfortunately students are not ready to have late response from the teacher as they are habituated to getting real time response from the teacher in a physical class.

4.1.3 Challenges of Content Development

It is a worldwide issue that in most of the online courses, instructors teach with the help of predefined content and materials (Evrim, Correia, & Thompson, 2011). The responses of the participant's teachers suggest that they have been taking online classes with the help of the materials and lesson plans which are supposed to be used to take regular physical class. According to Mr. ISM, though the medium of instructions and communication have changed from physical to virtual, the needed changes could not be done within the course content based on the precise context. As far as content development is concerned, teachers are not able to create new content as they are supposed to follow the instructions of NCTB (National Curriculum and Textbook Board). According to Mr. GIS, "We do not have that independence to bring any moderation to the prescribed content of the course. And, unfortunately we have not been provided any guideline or revised textbook to apply in the new context". Also, one of the teachers of Barasar Model College, Mr. NSM explains, he is in severe trouble to decide with the lesson plan of his class. For instance, generally in the physical class, he used to do lesson planning for forty five minutes. However, in this virtual classes, he needs to plan the lesson either allotting more time or allotting less time for some class. He clarifies, "I have three sections of students for the second year students. In one section, students want more time to be taught as things cannot be clarified within sixty minutes of online class. However, in another section, students want to finish the class as early as possible as they ran out of data package or they start feeling disconnected with the class because of concentration breakdown". Hence, it is tough for a teacher to manage the class by making three separate lesson plan for the same class. Mr. KML adds to this claim and says, "in fact we are not specialized or trained enough to plan a lesson based on the needs of online class. It would have

been interesting if we could have used audio-visual materials appropriate to the content of the lesson". One of the biology teachers claims, if the opportunity of online class could have been utilized, classes could be more functional, entertaining and communicative. He exemplifies, "Suppose, I am teaching the structure of human ear to my students. Now, there are many videos available in YouTube which explain this lecture by doing dissection of this particular body part. Such practical video demonstration is far better than the demonstration of a two dimensional picture that is provided in our textbook". He adds, of course this would have been better if he could show that video to the students. However, this is not possible for him as all the students cannot afford a smartphone or laptop. And, the suffering of poor internet connection remains on top of that.

4.1.4 Challenges in Addressing Different Learners

This has been one of the most challenging tasks for teachers as they switch from face-to-face to virtual teaching-learning pedagogy. According to one of the teachers, it is true that they know every other student has different needs and they practice different learning approaches to have the best outcome from their study. However, as he expresses, it is annoying that in a virtual class, due to the poor amenities of the context, it becomes almost impossible to take care of students having multiple intelligence. Mr. GIS explains, with the other contextual challenges (such as internet connectivity issues, time restriction, technical interruption etc.) in hand, it becomes difficult to design activities, tasks, and materials for every single class to address the students with multiple intelligence. Furthermore, from the perspective of Mr. BRI, teachers have been forced to deal with a lot of pedagogical and technological issues that they lose the motivation and spirit of conducting online classes. In a physical class, student's responses and feedback used to be a source of inspiration to work harder. However, students lack of interest in attending online class, little or no pedagogical help from the designated authority regarding conducting online classes- make teachers' effort vulnerable and less efficient.

4.1.5 Communication Barrier

As far as communication challenges are concerned, this can be of two types. Firstly, the communication between instructor-learner may struggle because of language barrier (Sherry, 1996). Or, struggle with communication may take place because of communication via different technological modes (Limperos et al., 2015). According to the participants of the study, because

of the interruption in communication, the effectiveness of online class has not been up to the mark. Communication from both instructor's and learners' end face difficulty due to the technological platforms. Mr. GIS illustrates, "Having feedback from the students and providing them adequate feedback- have not been easy in online platforms. It is impossible in an online class to provide needed feedback to all the students because of time limitation and connection interruption". Mr. BRI explains that taking class in online platform becomes much harder for him as a Math teacher. According to him, "As I do not have materials (e.g. PDF of solved math) to share through Facebook or *zoom* which would have facilitated online learning, I need to use whiteboard to make the students understand a particular math. However, if students do a comment while I am writing on the board, I cannot reply. Unfortunately, sometimes I do not feel that urge to reply because I do not understand the technology much". Moreover, some teachers complain that they do not get response from the students when students are asked any question. For example, Mr. KML claims, "I do not get response from the students when I ask questions. Students just join the class, however, do not follow the lecture. When I call out their names, no one responds".

4.1.6 Challenges in Effective Evaluation

This has been one of the major challenging areas of online pedagogy where the rural teachers have been suffering the most. According to all of the teachers, they are in total darkness in terms of students' performance evaluation through virtual platforms. As Mr. RJU claims, teachers have not been provided any guideline regarding how to assess students online. In addition, Mr. GIS mentions that he and his colleagues have not been able to find out any efficient and affordable testing policy to assess their respective students. Also, the quality of tests have been under questions as reliability and validity of a test could not be ensured. When he is asked how they attempt to evaluate students' performance, Mr. KML says that they provide the questions in the respective Facebook group and allot the required time to write the paper. And, as far as submission of the paper is concerned, students take pictures of their paper and message to the respective teacher to get feedback on the paper. Another method that the teachers of Barasar Model College have applied that they have distributed the questions as portable document file in the respective Facebook group and have asked the students to write the paper at home. Then the students have been instructed to submit the papers coming to the college. The teachers say that there have been severe instances of cheating and plagiarism in those papers. Moreover, even in the MCQ type tests

taken through google form, students find a way to do cheating. Students do communicate with each other through Facebook messenger to help each other to find out the correct answer. Furthermore, according to the teachers, it has been near to impossible to organize the question papers in different sets for so many students. Mr. RJU says, it is near to impossible to prevent cheating in online assessment in the given context. Additionally, checking the scripts in the form of image files is a tormenting job for the teachers. Moreover, teachers could not organize test in a regular basis. For instance, in Barasar Model College, the regular policy of the college is to take weekly exams of all the subjects they teach to the students in that particular week. However, as the college has switched to the online pedagogy, it has been impossible to take classes regularly and of course to give exams in a regular basis. Most of the teachers mention one specific issue that usually students study sincerely if there is an exam ahead of them. They feel the urge to study to perform well in the exam. However, in online teaching-learning context students find out ways to do cheating in the exam and so they have not been sincere in studies since the introduction of online education. To add, another significant issue that the teachers have pointed out that as teachers are unable to get authentic feedback from the performance of students regarding the quality of teaching, hence, it has been impossible for the teachers to bring adequate changes to their style of teaching and to the method of assessment in the given context. Hence, from the responses of the teachers, it has been demonstrated that conducting efficient online test to evaluate students' progress and performance is of the predominant challenging issues of online education.

4.2 Student's Perceptions: Challenges They Face in Attending Online Class

In this section, the voices of the rural college students which have been cumulated from the interviews would be discussed.

4.2.1 Challenges with Technology

Findings from the interview suggest, at the beginning of online education, students have faced difficulty in using the technological platforms such as *zoom* or *google meet*. For instance, NLA, one of the students of Barasar Model College mentions, in the earlier days of online class, she could not set up all the things (e.g. installing zoom, opening zoom id). As a result she took help of her elder brother. Moreover, during the introductory period of online education, she found it difficult to use these platforms as these were new to her, and, again her brother helped her to get used to with these platforms. Additionally, it is explored that majority of the students, precisely

the female students are deprived of digital devices such as smartphone or laptop. TJR says, "Imagine how difficult it was for students like me who had never used a smartphone before. I was totally in shock when I heard that classes would be taken online and I have to use either computer or smartphone".

4.2.2 Financial Solvency and Availing Technology

From the responses of some of the participants (table 2), it has been learned that a lot of students are unable to afford online teaching due to financial inconsistency. It has been challenging for them to buy a new smartphone or laptop just to attend online classes. As RKB claims, "My father used to work in a restaurant. I take a very little money from home to continue my study. I never go to private tuition and always take my teachers' and friends' help to understand a difficult subject. However, due to this pandemic- my father becomes unemployed. In this condition it has been impossible for me to spend an extra penny on buying such digital devices". Such sort of responses have been revealed by a lot of other students. On top of that, some of the private colleges have forced the students to pay monthly tuition fee as the teachers had no other income source other than being paid by the college. Hence, the issue of financial insolvency has been a prominent factor in availing online education.

4.2.3 Struggling with Internet Connection

Students' struggle with internet connection seemed to have no end. It has been frustrating for them that after investing money on buying the digital devices, they have been unable to attend online class due to poor internet connectivity. In most of the rural areas there is no 3G or 4G service available. Even if 3G service is available in some of the areas, the quality of service is worst. RKB says, "With such internet connectivity, attending online classes is impossible". On top of that, there are some region which fall under the connecting zone of two networks. That means, in that particular area both 3G and 4G service is available and none of the networks work efficiently. Moreover, another student says, "Though I have a laptop to use, however, I do not have access to any broadband connection. Hence, I use internet modem to avail internet. Nonetheless, it is sad that the connection keeps dropping. I called to the mobile operators, however, they could not provide any specific solution". To add, an interesting response that grab the attention of the researcher that there have been few participants who travel seven to eight kilometers to get a better internet connection to attend online class. And, they used to do classes seating in the premises of

a mosque because there is no comfortable place to stay and to attend online class. Do you travel now? - In response to this question, they say, "In first few days, we used to travel seven kilometers every day. Now, we do not travel as it is difficult to do on a regular basis". Few students say, "To avoid this struggle of travelling, three of us have rented a room near to the bazar where better internet connection is available". However, they admit the struggle of their other friends that not all of them can afford it due to financial crisis. Furthermore, buying internet packs in an unaffordable price cause trouble to the students and to their parents. Though the government mobile operator, namely, Teletalk has taken initiative to provide free service through BdREN platform for conducting online class, however, this facility is only for university students. On top of that, Teletalk has failed to serve the minimum data speed required for attending online class-students complain.

4.2.4 Difficulty in Teacher's Lecture

One of the common and significant complains or challenges that has been explored from the responses of the students is that they find it significantly difficult to keep listening to the lectures of teachers for hours. There has not been brought any change in the teaching style or lecture delivery though the platform of the pedagogy has been switched from physical to online. ARF illustrates that in physical class, some of the teachers used to use whiteboard to make them understand any difficult content. However, in online class most of the teachers do not use whiteboard. Also, the teachers cannot share any related content or cannot apply any alternative approach which could supplement the issue of not using whiteboard. RJB agrees with ARF and adds, it feels as if they have been mocked when a math or a biology class is taken without the use of whiteboard or anything supplementary to that. HBB describes another point of view on this issue. He explains that even if a teacher uses whiteboard, he cannot provide any instant reply to our questions until he finishes writing. NLA adds, even though some of the teachers try to use whiteboard, it becomes difficult to understand the writing of the board due to poor video quality. Hence, some of the students ask for being taught through PPT slides as the whiteboard teachers use cannot be seen clearly for poor video quality. However, a major portion of the teachers are not skilled enough to design PPT slides to conduct class. Precisely, students found it problematic to attend biology class because when teacher draw relevant figure of an organ, that is not visible due to low quality of the lecture video.

Moreover, students report, they are amazed that with the change of the platform of lecture delivery, the efficiency of teaching has been changed. For instance, some students report that they used to enjoy the English class taken in a physical classroom setting. However, regarding the online class- they feel bored though the class is taken by the same teacher. They reveal the reason as follows: "We think Sir is a bit lazy. He does not use any black/whiteboard and does not write anything throughout the class. Hence, we feel irritated in seeing his face continuously for hours. Also, sir keeps repeating the same grammar rules. Hence, the class duration gets lengthier for no benefit". However, another incident has been reported where they started to enjoy doing online Chemistry class than of the physical one. Students say, "Chemistry class is much shorter. He takes only 35 to 40 minutes of class. Hence, we can keep patience for this shorter period". To add, according to HBB, in the physical classroom, people who used to sit in the back benches could not hear the voice of the teacher as he does not have a louder voice. However, in an online class, as the teacher uses microphone, his voice is well understood unless there is any network interruption.

4.2.5 Communication Barriers and Teacher-Students Engagement

As far as communication barriers and teacher-students engagement are concerned, taken the context into account, these issues have been two of the most disadvantages of online class. Firstly, some of the colleges have started online class without giving prior notice. Students could not take enough mental and other needed preparation to attend online class. For instance, a student complains that she got informed that online classes are being taken by the college teachers right after one month of the beginning of online class! Again, it becomes challenging for students of private colleges to always stay online to get the notifications regarding class or exam. For example, some reports from the students reveal that in a lot of cases, many of the teachers could not maintain the class or exam schedule that has been announced earlier. In addition, sometimes teachers expect more from the students. Some of the teachers keep posting different lessons throughout the day and expects response from the students. "It feels irritating and increases pressure as it is not possible to stay online all day long"- claims RJB. However, students of the government colleges say that students are totally disconnected with the college and with the teachers for around one year! According to HBB, "In first few days, teachers used to contact us to get informed about our study progress. However, this step has not been continued until now. According to him, he feels psycho-emotional pressure and cannot consider himself a student anymore!

To add, communication during online class is a challenging task to complete due to other contextual barriers. Online class has not been beneficial for all levels (in terms of proficiency) of students. A lot of students do not feel comfortable to communicate with teachers in online because they find it difficult to understand any content. For instance, many of the students say it is tough and risky to ask questions to teachers in online class. As the classes are being recorded, hence, if someone asks a stupid question, it will stay recorded and others may laugh while they go through the video again. Hence, with such inhibition and confusion, expected teaching-learning outcome cannot be achieved. Moreover, due to internet connectivity issues, with such poor audio quality, effective communication cannot take place, NLA claims. Another point to be noted, with such challenges in hand, teachers are not able to provide instant replay or corrective feedback to the queries and concerns of students, which works as a barrier in ensuring effective teaching-learning pedagogy.

4.2.6 The Environment and the Quality of Learning

Students have been facing severe problem in coping up or in adapting with the environment of online class. It has been explored that the students do not feel the settings of online class to be comfortable enough to have efficient input from the class. For instance, RSD says, "I just cannot accept the environment first of all. The environment feels so made up and unrealistic to me". Some other students report that they feel isolated and out of connection even though they have been attending online classes. The explanation of such feelings is discussed in the response of RKB. He explains that usually he likes to study in group discussion. He likes to do group works. However, because of the contextual challenges, it is not possible to avail such opportunity in online class. A lot of the participants point out that absorption of knowledge simply does not take place in an online class because the class feels mechanic and artificial. Additionally, one of the significant drawbacks of virtual class has been exposed from the responses of the students. That is, as the lecture feels boring and the class feels mechanic, students do not put concentration on the class. Rather, they find innovative ways to keep chatting with their friends in between the live lecture. For instance, HNA mentions that he and his friends start chatting through Facebook messenger when the lecture feels boring and mechanic. A lot of students claim that they feel sleepy in online class. TJR says, "At the beginning we had to attend classes from 9:30 AM to 4:00 PM with a forty five minutes of break in between. It felt like torture to keep seeing the screen for hours. I used to

feel so sleepy during those class hours". And, the students admit the issue that this feels a waste of time in attending the lecture and it has been hampering their study. Also, it has been reported that all of the students felt sleepy during online class. Moreover, students who enjoy to learn being under someone's supervision, they have been suffering as the institutions are closed and they get no pressure or motivation from the teachers.

In addition, students who are in science group, have faced some additional sufferings. They have been deprived of attending practical classes. As HBB explains, "It is significant for us to attend the practical sessions to understand some of the contents and theoretical concepts of the subjects like Biology, Chemistry and Physics. Moreover, we have to learn to perform these "practical tasks" as these tasks contain a significant number of marks which has the potential to affect the overall result". However, it is a sad truth that practical classes could not be conducted by any means and it has been one of the predominant challenges of online pedagogy.

4.2.7 Struggling with Taking Exams

As far as taking exams pertaining to online class is concerned, instances of severe discrepancies have been exposed through the voices of the students. The instances prove that the quality and standard of exams have been sacrificed from both the teachers' and students' end. According to students, whether it is a class test or any sort of final exam, the atmosphere does not feel like test-environment. Students do not take the tests sincerely because of two of the prominent reasons. First of all, students do not take the exams sincerely because online education has failed to make them competent enough to sit for a test. For instance, RSD explains, "I do not think the students, including me, have studied enough to sit for an exam. When the process and the things are not favorable to study, the issue of exam does not sound good". Secondly, as there are ample opportunity to do cheating in the exams, students take the opportunity and they do not study enough. This research has explored various ways that students apply to do cheating in exam. Hence, it has been like a vicious cycle.

In addition, both the teachers and the students know the end result of conducting exam in an online setting. As far as the methods of taking exam are concerned, both teachers and students are not satisfied with the methods applied. For instance, students complain that they have been forced to take exams through google form. NLA says, "Though there are some drawbacks, may be, to some extent, MCQ type exam can be taken with the help of google form. However, how could the

teachers ask to take subjective written exam through google forms"? In comparison with the responses from other participants, it has been explored that teachers have asked the students to write their Bangla paper in google form. Now, the discrepancy lies here. ARF explains, "If students are not skilled to write Bangla font, how could the teachers ask us to take our exam in google form"? Moreover, after providing the question papers in portable document file format, some of the colleges ask the students to write the paper at home. Once, all the papers have been written, students have been asked to submit the papers by going to the college. In this case, test takers have been allowed more time to write the paper than of the usual time they used to get in physical exam. Moreover, another method that has been applied to conduct exam is, students have been served the question paper online by the teachers. Students have been asked to write the paper and to take photos of their respective papers. Finally, as far as submission is concerned, students have been guided to submit the papers (the photos) by messaging (through Facebook messenger) to their respective teacher. Now, all these three methods either have been challenging for the students or for the teachers. The first and the third methods have been severely challenging for the students to write and for the teachers to check the papers and to provide adequate feedback to the students.

As far as providing feedback on the scripts is concerned, most of the students report that they do not expect any feedback in the papers they submit because most of them did not put any effort in studying and learning except for putting effort in doing cheating or plagiarism. And, there have been a few students who have been truly sincere to their study and to the exams they have taken. They claim that it has been challenging for the teachers to provide feedback to all the scripts which have been submitted as picture files. Hence, this study explores that the methods which are implemented by the teachers to take exams based on the lessons of online class have significantly failed to maintain the standard of exam and to accomplish the goals of teaching-learning.

4.3 Expectations of Stakeholders to Make Rural Online Pedagogy Efficient

It is true that the new normal situation has changed the education pedagogy dramatically. Teachers and students, being two of the most important stakeholders, have been forced to bring changes in their regular teaching and learning style and some sudden decisions have been imposed upon them regarding online teaching-learning. What do the teachers and the students think of such sudden changes and what do they expect from the concerned authorities- the aim of this section is to explore the answers of these questions.

4.3.1 Teacher's Expectations

Though the national education policy-2010 has emphasized on digital-multimedia classroom, however, those initiatives are only efficient for physical classroom, not for virtual classrooms (Parvin & Salam, 2015). To enhance the digital competency of secondary teachers of Bangladesh, the government of Bangladesh, according to the teachers' suggestion, should introduce the following training and follow-up sessions for the teachers.

4.3.1.1 Teacher Training

Firstly, teachers need to be trained to use the technological devices. For instance, most of the teachers, precisely the teachers from earlier generation, do not know how to use smartphones, laptops. Also, they are not experienced in using certain immensely essential software such as *zoom* or *google meet*. If it is considered in the light of TPACK (Technological Pedagogical Content Knowledge), this initiative will fall under Technology Knowledge (TK). According to all of the participant teachers, if appropriate training is provided, then teachers can be efficient online classroom practitioner.

In addition, according to the teachers, special training should be introduced to train the teachers to conduct online exam. Whatever technological and contextual support is needed to arrange online exam, a precise rural context based policy should be introduced so that teachers can arrange productive online exams.

4.3.1.2 Incorporation of Pedagogical Content Knowledge through Technology

According to the participants, teachers should be provided training on how to incorporate the functions of different technologies to an online lesson and to design materials. According to Mr. KML, once the teachers know how to use any device/platform/technology in class, only then teachers can think of planning a lesson and of designing materials to support that lesson. For instance, if a teacher knows that in a *zoom*-based class he can show video clip to teach a lesson, only then he would think of integrating communicative language teaching-learning approach or of adding visual materials in class to have best possible outcome of teaching-learning.

4.3.1.3 Psycho-emotional Support

Finally, after listening to the voices of the participants, the researcher realizes that another significant task the government should introduce is to council the teachers to make them mentally prepared to conduct online classes. It is challenging for the teachers to suddenly switch to virtual classroom who has been teaching in physical classrooms for years. It takes time even for the young generation to talk in front of the camera assuming that people are watching from the other end. Also, follow-up training sessions have to be initiated, otherwise such training would go in vain like other training projects of the country (Karim et al., 2018).

4.3.2 Student's Expectations

To achieve the goals of online education, needs analysis of this very new context should be done to know the precise expectation and needs of the students. This section of the study attempts to find out the expectations of students regarding making online pedagogy attainable and efficient.

4.3.2.1 Financial Assistance

According to many of the students, financial support should be offered to ensure better participation in online class. A lot of classmates of the participants could not participate in online class as they could not afford the digital devices. A mentionable number of students report that they are not from a solvent family. Many of the students have been found who themselves assist their study by doing tuition. On top of that, earnings of a lot of families have been threatened due to the pandemic. Hence, to get required devices, to buy internet data packs on a regular basis-financial support should be provided to the students who require it. HNA points out, "Not all the students need such assistance. However, it must be offered to the students who truly need it to continue their study in the pandemic". According to HBB, the respective class teacher of a class can do the survey and can find out the students who truly need such financial assistance.

4.3.2.2 Ensuring Better Internet and Electricity Service

Students report, this has be the utmost priority of the concerned authority to ensure participation and effectiveness of online education. It is impossible to conduct online education with such miserable quality of internet service. Both the teachers and the students have been facing challenges due to this issue. ARF says, "I do not know if the policy-makers do their research. How

come they are not informed about the condition of internet data speed, price and network availability in our rural areas"? Some of the participants have raised question about the decisions of the concerned authority. By pointing out the fact that the quality of internet and electricity service in the rural and in the city areas are not same- they say, "Having such discrepancies in practice, how could some vague overgeneralized policy regarding online education be suggested and implemented"?

4.3.2.3 Moderation in Lecture

As far as the quality of teaching-learning is concerned, it has not been satisfactory to the students. Though there have been some of the beneficial facets of online education, however, the minimum benefit of it could not be achieved due to unplanned and poor lecture quality as it has been described in the earlier sections of the study. However, in this regard, students have suggested some moderation to be implemented to make the lectures more efficient and useful. NLA suggests, "As availing live class is challenging due to internet and electricity issues, hence, rather than making live classes mandatory to participate, lectures can be shared in YouTube far earlier than of the live discussion takes place". She explains, if all the lectures of a particular item or subject is shared in platform like YouTube from where those shared lectures can be downloaded, then it would be better. Agreeing to NLA, TJR says, in this approach, once in a week, students may go to the place where better internet connection is available and may download all the lectures. Moreover, she adds, "We can watch the lecture and we can share our difficulties in our Facebook group. At this point, respective teachers can make a new video or conduct a live session to discuss our queries and difficulties. The live session can be recorded and the recording can be shared so that students can download it too". However, some other students ask to put importance on the quality of lectures. They say, the lectures should not be boring and there should be component for all types of learners. The audio-visual quality of lectures should not be sacrificed.

4.3.2.4 Efficient Assessment Policy

Students want better alternative assessment policy. First of all, as the students are not skilled enough to type Bangla in keyboard, they do not want to take online exam. Secondly, most of the students do not have laptop and they use smartphone to attend online class. According to them, it is not practically possible to do typing for hours in a smartphone. Students ask for physical exam to be arranged. As RSD mentions, "I am in support of taking exams physically. I do not feel

comfortable in online exam". He and his friends mention the reasons that online exam does not feel like exam. That is, they cannot be serious and sincere in online exam as there is ample opportunity to do cheating. RKB suggests it would be better if physical exam can be arranged by roster. According to the learners, students can be divided into groups and physical exam can be arranged twice or thrice in a month for every group. The study has explored that students are totally against online exam as it requires additional skills other than just studying and it creates burden on them.

Chapter 7

Discussion and Conclusion

The aim of this research has been to explore the voices of rural college teachers and students of Bangladesh regarding the technological and pedagogical challenges they have been facing while participating in online class during COVID-19 period. The research has also inquired the participants' expectations and suggestions regarding making online teaching-learning efficient.

7.1 Summary of the Findings

It has been explored that the college teachers struggle to take class using the online platforms such as *google meet* or *zoom*. Internet connection with inadequate bandwidth and with ceaseless interruption have caused difficulties to conduct online class. Moreover, teachers having little or no experience in designing context-specific materials to address students with different intelligence has been one of the hideous factors in the process of ensuring efficient online teaching-learning. Teachers-students communication could not take place as per the expectation of teachers. To add, teachers have struggled to conduct students-friendly assessment and to provide adequate feedback on time. In addition, the findings (table 2) indicate the struggles of the students in affording the required digital devices to participate in online class due to financial inability. Also, it has been stressed for them to use the online platforms because of inexperience. Network interruption has been reported as another significant impediment in attending online class. Students report that classes have not been communicative and the presentation method of teachers has been boring. The communication between teachers and students has not been animated and engaging. To add, the study depicts that students have suffered significantly as the assessment approaches have not been beneficial and authentic. Furthermore, teachers expect that adequate training program should be introduced so that they can develop online-context specific content and can use the technological platform efficiently to ensure expected teaching-learning take place. Also, the students expect to get adequate financial support and uninterrupted internet connection to be provided. Finally, students demand more communicative and engaging classroom, and practically feasible student-friendly assessment methods to be implemented.

7.2 Discussion

If the findings of this study are consciously analyzed, as far as the challenges of participating in online class in rural context is concerned, it is evident that the responses of the teachers and the students shows relevance and consistency to support each other. First of all, it has been evident in the responses of both teachers and students that online class has not been comfortable for them as they have been forced to use the technological platforms without having any prior exposure to the technology which has been used for COVID-19 period educational pedagogy. And, such result is supported by previous studies as well. For instance, it has been mentioned in studies that inadequate technological infrastructure such as lack of devices due to financial crisis, lack of computer operating skill, inadequate internet facilities, and interrupted power supply with consistent load-shedding can cause serious impediments to online teaching-learning (Oluyinka et al., 2019). In addition, one of the most context-specific significant findings of this research indicates that in comparison to male students, female students have suffered in availing digital devices to attend online class since parents have showed more rigidity due to socio-cultural phenomenon of the context. Though, other studies, labeling DT (Digital Technology) as an indispensable tool for lifelong learning (Jung & Latchem, 2011), suggest all the stakeholders related to distance teaching-learning pedagogy to be skilled enough in DT to ensure efficient participation in online class, however, the stakeholders have not been skilled enough to ensure expected participation in online class.

In addition, the job of an efficient teacher is to generate new materials or to adjust the existing materials in a new context (Li & Irby, 2008). However, it has been studied that when it comes to adjust new materials to an online pedagogy, teachers find it difficult to carry out the task (Li & Irby, 2008). Also, it has been reported that when a similar teaching style of physical class is implemented for teaching in an online class without having the required contextual materials- that class cannot be efficient enough to ensure teaching-learning outcome (Koehler et al., 2004). For instance, if one of the textbooks, namely, Physics, of class twelve is analyzed, it is evident that there are chapters and topics which cannot be explained or learnt efficiently just with the help of a teacher who is providing online lecture. If chapter nine of physics first paper (Shahjahan et al., 2013) is considered for an example, it is evident that the topic, namely, vibration of air column in a closed and open pipe, cannot be explained just with lecture without having practical hand-on

equipment. Though it has been suggested that teachers should take content, pedagogy, and technology into account to teach in an online setting (Koehler et al., 2004), however, this study has explored that teachers find it challenging to cumulatively apply all the skills because of their inability or because of the other contextual challenges. The teachers themselves have admitted that as far as online teaching is concerned, they have not been as efficient classroom practitioners as of physical setting. Though the instructors are considered to be the single most important factor in determining student success in an online class (Tunks, 2012), however, the findings of this research indicates that the rural college teachers have failed to prove it. Most of the teachers have not been able to take care of students with different intelligence. The teachers could not initiate opportunity for students to practice group or pair work. In addition, it has been researched that the contextual shift in the instructors' role must be supported by the technology and the curriculum developers (Fein & Logan, 2003). However, the teachers of rural colleges have complained of not getting any such support from the concerned authority. The responses of the students also claim that teachers, while teaching in online class, have not been as efficient as of physical class. Such inability of addressing students with multiple intelligence, particularly in language teaching-learning classroom, creates impediment in classroom management and does not facilitate expected teacher-student communication, hence, overall hampers the teaching-learning pedagogy (Wood et al., 2005).

To add, communication between teacher-technology-students have been inefficient as far as online education in rural Bangladesh is concerned. The importance of providing corrective feedback is discussed in an ample amount of articles (Nassaji, 2018). Nevertheless, the teachers under study could not provide corrective feedback on time and on a regular basis. Study says, to make the communication between teacher-student most efficient, it is needed for both the stakeholders to take live cues from one another (Coppola et al., 2001). Teachers complain that as they have been unable to see the students, they have been unable to take cues from the learners. In addition, the responses of the teachers revealed that none of them have followed any informed and efficient feedback method to communicate with the students.

Additionally, according to McInnery and Roberts (2004), students may feel isolated and disconnected in online class, however, they have suggested the respective instructors to implement required actions to make online class engaging and communicative. Participants' responses in this

regard reveal that in online class, students have been passive recipients rather than being actively engaged in learning (Romiszowski & Mason, 2004). Communication in between teachers-technology-students has not been efficient which could serve the objectives of online class. Existing studies claim, learners' participation in online discussion can be enhanced by mixing audio or video discussion with online text discussion (An & Frick, 2006). However, as the teachers under study could not facilitate such opportunity of discussion, students find it challenging to intrinsically engage themselves in the online class. For instance, there are topics (Unit:9, Lesson:3) in the English book (Billah et al., 2015) of class eleven-twelve, which should be taught using multimedia based materials, in contrast, responses of the students suggest that language teachers could not use multimedia due to poor internet connectivity. To add, Goodyear and Zenios (2007) mention that to ensure effective knowledge building, it is predominant that learners feel they belong to the knowledge community as a valued member. However, student's responses suggest that the online classroom environment has been challenging for the students as the classes felt mechanic and artificial to them. The sense of cordial relationship and communication between students have been deteriorated and communication has become more of a routine work.

As far as online assessment is concerned, Whitelock et al. (2006) explain, there are eight steps that have to be ensured in an online assessment to make it efficient and successful. These steps include motivation, design, creation, testing, delivery, data retrieval, processing and feedback, evaluation of outcomes, and lastly feedback into the process. Majority of the studies referred E-assessment as an electronic process in which all the required steps are supposed to be done by electronic means. In other words, starting from the design of a test to the feedback-providing step- all have to be completed using digital technology (Alruwais et al., 2018).

Nonetheless, the assessments which have been conducted by the teachers under study, can be called neither physical exam, nor online exam because the findings indicate that none of these exams fulfilled the amenities of assessment. The design of questions has not been fit for online exam as the PDF (Portable Document File) of traditional-exam question has been provided to the students through Facebook group. Recording of responses has not been done electronically-students have written on physical paper and have sent the responses as of image file to the respective teacher. Delivery of feedback- could not be provided as per the needs of the students as a lot of response papers (photos) have been submitted to the teachers and it has been impossible

for them to go through all those photos and to write feedback for each of the papers in another notebook. And, to provide feedback, more than one online classes have been needed. Also, online assessment has not been advantageous to the students as the way the teachers have conducted those exams could not ensure students participation, easiness at taking exam, and opportunity to analyze students' performance (Denovan et al., 2007). Also, even if the issue of assessment is taken into account from institutional perspectives, the methods that have been applied by the teachers have failed to ensure authenticity, reliability and validity (Liu et al., 2015) standard of an exam. Also, the findings, gathered from the responses of the participants of this study, contradict with some previous research claims. For instance, according to some studies, online assessment has been proved as a tool to improve students' performance (Denovan et al., 2007). Also, some other studies claim that online exam facilitates the students of remote area with options and flexibility as exam can be taken from their very own location, at any time (Osuji, 2012). Nonetheless, the responses of this research depict that even for the remote students, online exam has not been beneficial due to relevant contextual challenges e.g. poor technological support, miserable internet connection, inexperienced teacher, and lack of guideline towards the teachers.

Furthermore, studies suggest that with proper training, teachers' skill or efficiency can be enhanced to make them successful online practitioner (Wang et al., 2010). Conducting some vast investigation on the teachers-training program, it has been explored that teachers' learning curb go through four stages e.g. the ''wow'' stage, the ''oh-oh'' stage, the anxious stage, and the internalizing stage while the trainees learn something new (Wang et al., 2010). Studies have also suggested that showing adequate response to the psycho-emotional affective factors (such as attitudes, motivation, and anxiety) of remote teachers, it is possible to make the teachers skilled enough to carry out a specific task in classroom practice (Freeman, 1989). Hence, in this study, the expectations that have been uttered by the teachers would be significantly helpful for the policymakers to initiate required action to bring expected teaching-learning outcome from an online class. Also, teachers would be able to know the issues that students expects from them and hopefully, the teachers would be able to address students' expectations regarding online class by producing context-specific materials which would make classroom more interactive and animated.

7.3 Limitations and Further Study

7.3.1 Limitations

As far as this study is concerned, one of the limitations is that the researcher could not depict the voices of all the stakeholders pertaining to the topic under study. For instance, the researcher believes, it would have been better if the researcher could have added the perceptions of the parents and also the relevant policy makers. To add, the research would have been more functional if more participants from other institutions could have been interviewed and if some of the online-classes could have been visited and analyzed.

7.3.2 Further Study

To have further understanding on such research, a comparative-analysis based study can be conducted to know the efficiency of online education in the urban and in the rural areas of Bangladesh.

7.4 Conclusion

Sudden introduction of online pedagogy has been a challenge for both the teachers and the students of rural context. Technological, pedagogical and other contextual challenges have hindered the efficiency of online education- hence, with such challenges, the objectives of online education in rural context could not be achieved. None of the stakeholders could fulfill one another's expectations. However, the participants of this study have shared some of the sustainable concerns which, they think, will make rural online education efficient.

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Appendix A

A Sample interview questions for a student regarding challenges he faces in online class.

1: **Researcher (R):** Do you participate in online class regularly?

2: **R:** Do you enjoy doing online class?

3: **R:** What are the things you do not like or do not feel comfortable with online class?

4: **R:** Okay, do you think that only you are facing these problems? What about your classmates?

5: **R:** You have talked about adaptation. What are the things you need to adapt to?

6: **R:** What about the quality of internet service in your area?

7: **R:** Okay, what about 3G service? Is it not available in your area?

8: **R:** Why? Can you explain more?

9: **R:** I see. Do your teachers arrange online exam?

10: **R:** Why do you think so?

11: **R:** What about conducting exams using online platforms like google form?

12: **R:** What is your perception to make online teaching-learning more efficient?

Appendix B

A sample interview questions for a teacher regarding challenges he faces in online class.

1) **Researcher (R):** Have you been taking online class?

2) **R:** What about the participation rate of students in online class? Do you notice any difference compare to physical class?

3) **R:** Since you are an experienced teacher, you must be enjoying the new platform of teaching?

4) **R:** Can you share your experience regarding the differences between online and physical classroom practice?

5) **R:** What are the changes you need to make to be a successful online teacher?

6) **R:** Advantages and disadvantages of distance teaching-learning?

7) **R:** What are the challenges or difficulties you think students have been facing in attending online class?

8) **R:** Can you shed some light on the assessment policy in online teaching?

9) **R:** Have you been provided the required support regarding online teaching from designated authority?

10) **R:** What is your suggestion to make distance learning more efficient?

11) **R**: What would you expect from the policy makers to make this new form of teaching-learning successful?