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Addressing the Challenges to the Digital Collaboration Regarding the Shift from Physical Classroom to Zoom Classroom During COVID-19 Pandemic.

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Abstract

The purpose of the study is to explore how students and teachers do experience online collaboration and its challenges while working remotely during the COVID-19 pandemic. Specifically, this study investigates how the students and teachers do experience teaching-learning conditions while performing online collaboration during the COVID-19 pandemic period and How they do face and tackle challenges to the online collaboration of home working over the traditional collaboration of physical classroom.This study uses online collaborative learning (OCL) as a theoretical lens as addressed by Linda Harasim in (2017).This study uses a qualitative research method to collect empirical data. This study conducted in-depth qualitative interviews with 10 students (05 students of the public university and 05 students of private university) and 10 teachers (05 teachers of public university and 05 teachers of private university) in Bangladesh.Both teachers and students have mixed experience about online collaboration where both parties should be improved regarding online teaching equipment and proper interaction should be increased in the classes to make it effective, for example, increased the number of student's presence. This study argues for some challenges to online collaboration during online classes over physical classroom such as low internet speed and high cost of data connection, lack of seriousness/interaction of the students, technical skills and quality enhancement, unavailability of teachers after classes to solve student's problems, difficult to keep concentration for a longer time, lack of proper judgment during online evaluation. This study also argues for idea generation, idea organizing, and intellectual convergence among teachers and students regarding online classes.

Keywords: *COVID-19, Online Education, Online Learning, OCL, Digital Collaboration, Online Teaching Equipment.*
JEL Code: **I21, I23, I26, I28.**

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Introduction

COVID-19 is a serious pandemic launched from 2019 and effect all over the worldin every aspect especially in economic and education sector. It was not stopped at the national borders where everyone is interconnected. Students, education, business, health, and gender nothing is out of its ruthless affect for last couple of years. During this time education sector was heinously affected all over the world. The first module, published end of March 2020 – "*A framework to guide an education response to the COVID-19 Pandemic"* is a tool to support education leaders based on a cross-national survey conducted between the 18th and 27th of March 2020 (World Health Organization [WHO], 2020; United Nations, 2020).

Many rich countries manage their education system during this pandemic but especially low income countries face many challenges to include all the students in this process. Teachers and faculties of the universities face hardship to run the education system from remote area when all the physical classes were stopped (Pokhrel, 2021). A competent instructor is one who has no doubt and has a good hold on the subject, knowledge of ICT (Information and Communications Technology), implements its usage in the classroom, and has a positive attitude towards elearning (Baber, 2021). The COVID-19 pandemic has changed the world of education starting from the learning process, which is usually done in the classroom face-to-face, but since the pandemic it has changed to online learning (in the network). Web centric course is the use of the internet that combines distance learning and face to face (Gonzalez, T., De La Rubia, M. A., Hincz, K. P., Comas-Lopez, M., Subirats, L., Fort, S., & Sacha, G. M., 2020).

During this pandemic teachers have to face some struggle regarding to conduct the online education because all the teachers were not capable to operate online tools and had not enough knowledge about the management of the online educational tools like ZOOM, Google Classroom etc. Moreover, student participation was not acceptable and main challenges to engage them. Education quality has deteriorated during and after the COVID-19. As universities increasingly move towards fully online and blended teaching modes, there is much discussion as to what this means for pedagogy (Dahlgren, Marton, Hounsell, & Entwistle, 2005; Gregory & Salmon, 2013; Jaques & Salmon, 2007; Kirkwood & Price, 2014; S Burgess, 2020).

While many of the practices that are used in face-to-face contact modes can be adapted and utilized in the online context, it is not simply the case of applying a "one size fits all approach" which is what teaching staff relatively unfamiliar with the online environment tends to do. This is where either the

content or delivery used in other, usually face-to-face contexts is adapted to a seemingly compatible online format and therefore deemed suitable for all learners and cohorts across each mode. Instead, scales of adaptation and differentiation within the approach should be used to better differentiate between different learners as well as different contexts of teaching via online and live modes (Gillett-Swan, 2017).

Therefore, the purpose of the study is to explore how students and teachers do experience online collaboration and its challenges while working remotely during the COVID-19 pandemic.

> **RQ-1**: How do the students and teachers experience teaching-learning conditions while performing online collaboration during the COVID-19 pandemic period?
>
> **RQ-2**: How do they face and tackle challenges to the online collaboration of home working over the traditional collaboration of physical classroom?

Objectives of the study:

General Objective: To explore and analyze the experiences of students and teachers in online collaborative learning during the COVID-19 pandemic, with a focus on identifying the challenges and opportunities of digital collaboration compared to traditional classroom settings.

Specific Objective:

i. To examine how students and teachers experienced teaching–learning conditions while engaging in online collaboration during the COVID-19 pandemic.
ii. To identify the key challenges faced by students and teachers in shifting from physical classroom collaboration to online collaboration (e.g., internet issues, lack of interaction, assessment difficulties).
iii. To analyze the coping strategies and practices adopted by students and teachers to overcome barriers to effective online collaboration.
iv. To evaluate the implications of online collaborative learning for future pedagogy, especially in contexts similar to Bangladesh.
v. To provide recommendations for improving digital collaboration in higher education through enhanced technological, institutional, and pedagogical support.

Literature Review:

Over 1.5 billion learners in 165 countries are attracted by COVID-19 schoolclosure (UNESCO, 2020). This translates to 87% of the world‟s student population. Several authors around the world have carried out research on the influence of COVID-19 on academic performance of university students. For instance, (Gonzalez, T., De La Rubia, M. A., Hincz, K. P., ComasLopez, M., Subirats, L., Fort, S., & Sacha, G. M., 2020) analyzed the effects of the COVID-19 confinement on the autonomous learning performance of students in higher education. To perform the analysis, these authors used a field experiment that included 458 students divided into two groups: the control group, and the experiment group. Students in the experiment group were those who took online classes as a consequence of the confinement. As a result, (Gonzalez, T., De La Rubia, M. A., Hincz, K. P., Comas-Lopez, M., Subirats, L., Fort, S., & Sacha, G. M., 2020) found that this confinement had a significant positive effect on the academic performance of students, which helped to improve students'learning strategies to a more continuous habit, improving their efficiency.

Similarly, Adnan and Anwar (Adnan & Anwar, 2020) launched a surveyedon college students in Pakistan towards online classes during COVID-19 pandemic. To complete their study they surveyed both undergraduate and postgraduate students of Pakistan where they successfully revealed that, online classes could not produce preferred result on academic performance since maximum students are not capable to access the internet to be connected in online classes. Moreover, these authors exposed that, during the COVID-19 pandemic, students experience other complications, such as response time, absence of traditional classroom socialization, and lack of face-to-face collaboration with the mentor. In other research, Demuyakor (John Demuyakor, 2020) analyzed the satisfaction level in higher educational institution in china of Ghanaian international students during COVID-19 pandemic. To assemble data, this author conducted an online survey focused on level of gratification of online education and how Ghanaian international students were dealing with this new situation. Results specified that most of the students exposed a positive outlook towards the carrying out of online classes, even though they had to pay high costs to access the Internet with very slow connectivity.

To fulfill the goals of the institution in teaching online, it requiresconsistency of content, objective clarification, learning methods, and learning psychology. Inappropriate vision, guidelines and plans for E-learning can be detrimental for the development of education ("Y. & Rajkhan," 2020)

Theoretical approach

There are several theories and models related to the study of online learning,but. For this study, the researchers found Online Collaborative Learning (OCL) to be the most suitable model to be used in this research. The reason behind using Online Collaborative Learning (OCL) is to help understand how students and educational institutions accept and use technology for teaching and learning.

Online Collaborative Learning (OCL)

OCL is a theory that was proposed by Linda Harasim. The theory focuses on the internet as a source of learning through fostering collaboration and building of knowledge. Harasim describes the new theory of acquiring knowledge as one that is focused on collaborative learning, internet use, and knowledge building. (Linda Harasim, 2017) can be described as a way of reshaping formal, non-formal, and informal education. Just like Siemens, (Linda Harasim, 2017) points out that many benefits are associated with moving to teach and learning to the internet and predict a large scale network of education being created from the concept of e-learning. In some instances, he utilizes Alberto Barabasi's point of view on the power of networks. OCL is believed to support three phases of knowledge acquisition and construction.

They include the following;

- **Idea generating:** This is a phase that involves brainstorming. In this phase, divergentthoughts are put together.
- **Idea organizing:** Different ideas are compared, analyzed, and put into a category usingorganized discussions and arguments.
- **Intellectual convergence:** At this phase, intellectual synthesis and consensus take place.

Agreeing to disagree is embraced; assignments are made in the form of essays as well as jointpieces of work (Linda Harasim, 2017).

OCL is also based on social constructivism. This is because the learners are encouraged to solve problems collaboratively by way of discourse. The major aspect of OCL is that the work of a teacher is to facilitate the process of learning. In other constructivism theories, the teacher is an active facilitator of knowledge acquisition. Due to the significance of the duties of the teacher, online

collaborative learning is not easy to scale up. OCL is mainly suited for smaller instructional environments, unlike connectives, which is mainly large-scale based. Therefore, when seeking commonality among online education theories, OCL becomes significantly important. Several theories are closely related to online education. However, instead of coming up with many theories and trying to keep up with the major aim of the research, it is essential todetermine whether an integrated or unified theory of online education is something that can be adopted and successfully implemented (John Demuyakor, 2020).

Research methods and plan:

Research approach

My research adopts the qualitative interview method.

Case organizations selection

I choose one public university and one private university in Bangladesh. Due to my topic the university is more appropriate for my data collection where I have easy access to collect data for my research purpose.

Participant's selection:

I conducted unstructured qualitative interviews with 10 students (05) students of the public university and 05 students of private university) and 10 teachers (05 teachers of public university and 05 teachers of private university) in Bangladesh. I used snowballing method for my research which is conducted for unstructured and free flowing interview with a small group of people. So, I conducted interview with 20 participants with snowballing method.

Interview process:

The interview was conducted online via Zoom meeting with both studentsand teachers for 50-60 minutes each. I selected several questions for the interview which is classified under two main research questions. A pilot interview has been conducted to test the validity and reliability of the study. The empirical results from this interview have not included in the main study, however, this gave me the valuable insights to enrich my interview guide discussing with the supervisor.

Data Analysis strategy:

The main purpose of the study is to gather valuable feedback from universitystudents and faculties on their experience about online mode of teaching and learning. I thematically analyze the empirical data through the theoretical lens of Online Collaborative Learning (OCL).

Empirical Results:

The interview was done to get a thoughtful of the experience of teachers and students about the newly introduced online mode of education. The interview results are separated into two sections, namely, experience of teachers and experience of students about online classes during COVID-19. The results for both are discussed separately. Major outcomes from the interviewees are as follows:

Low internet speed and high cost of data connection

In Bangladesh, most of the districts are not under the proper internetconnections where students from village side cannot connect in online classes from their home which is the main problemduring the COVID-19. On the other hand, data connection package in Bangladesh is much expensive regarding the neighboring countries. One respondent reflects as like: **'*Most of the students who did not take part in the online classes have internet problem to connect and disconnect of internet frequently' (teacher-1)***. So, it is not possible for all the students to include in online collaboration. During the online classes students are disconnected several times from the classes even when teacher gives important lectures like math or difficult equations. Moreover, Teachers also face difficulties to take the classes with low internet speed. This statement is taken from the evidence from a participant as stated below: ***'Students who were from rural areas extremely facing slow speed of internet and sometimes loss of data connection. Hence, Proper interaction was not possible during online collaborations' (student-3).***

Lack of seriousness/interaction of the students

During the online classes students were not serious about their classes. Mostof the classes students were inactive in giving their responses that they became understand or not. One respondent reflects as like: ***'Students just connected in the classes but either they understood or not was not clear to the faculties during and after the classes. As a result, teachers could not improve their teaching methods' (teacher-3).*** Students were not connected with video that the teachers can understand students are taking the class notes carefully. This fact is taken from the empirical evidence from a participant as stated below: ***'during the class time students were moving around the outside and not engaged properly in online classes which is extremely lack of seriousness' (student-2).***

Technical skills and quality enhancement

Due to conducting regular online classes teachers can enhance their technical skills regularly. Before this pandemic, maximum teachers were not informed about digital platform like zoom, Stream Yard, Google classroom, Google meet, duo etc. By this way they can make their classes more effective to the students where all the elements of the learning can be presented in a single platform. One respondent replicates as like: ***'During online classes teachers can show their slides and different documentary along with websites which is more effective rather than physical classroom education because in physical classroom all this equipment cannot manage together all the time' (teacher-8).*** Most of the educational institutions could not provide the full technical setup to continue the online classes during the COVID-19.

On the other hand, ***'Before this pandemic most of the students and teachers were not familiar with this zoom, Google classroom, Google meet etc. but maximum educational institutions did not arrange any workshops for the teachers and students which was main obstacles to engage in online classes.'*** This fact is demonstrated as empirical evidence from a participant ***(student- 6).***

Unavailability of teachers after classes to solve student's problems

During the e-collaboration of the teaching & learning, students did not get the teachers all the time to solve the problems after completing their classes. In physical classes students can make them clear after the lectures with the teachers in consultancy time by taking personal appointment which is not possible during e-collaboration. One respondent replicates as like: ***'Most of the times after classes teachers are disconnected from the class and students did not get enough chance to raise any issue to solve the problem regarding study' (student-9).*** Teachers are only available in online during the class hour which make a negative impact on students learning and result as well. Moreover, „during online collaboration students were not so responsive to solve their problems where they just keep them mute and not much attentive so they face problem during homework" this fact is demonstrated as empirical evidence from a participant ***(teacher-7).***

Difficult to keep concentration for longer time

In the physical classes students and teachers can make some interesting gossip to keep the students concentration for the full session of the lectures. As the students are not much interactive and less responsive to the teachers so, in the long session students cannot keep their concentration properly and less understood with the

lectures during online collaborative learning. One respondent replicates as like: ***'it was very difficult to concentrate in online classes when students could not see the teachers but only listen the voices which could not retain the concentration to the classes' (Student-10).*** On the other hand, Teachers also failed to keep their patience to give the full effort long time in absence of student's response during online classes. Most of the teachers are not fully satisfied by giving the online lectures due to the lack of concentration of the students. Additionally, „in online collaboration were not much communicative between students and teachers as a result classes were not interesting to keep their concentration on.‟ this statement is flawlessly publicized by the empirical evidence from the **teacher-4.**

Lack of proper judgment during online evaluation

During the e-collaboration, most of the students were just connected in online classes but not completely attentive to the lectures. So during, the online exams students try to choose unfair ways like messenger group or Whatsapp group to share the answers with other friends which make negative impacts on proper judgment of the students who engage with the classes attentively and get the equal marks who did not class regularly and attentively. This statement is reflect from **teacher -2,** as ***'during the online exams students are taking help of their friends through Facebook Messenger, Whatsapp etc. as a result all the answers are same with others so they got less marks.'*** Moreover, during the online exams students excuse the slow internet andturn the camera off then they took the help of online site to give the answers of the questions. In the developed country they use different technologies to stop these unethical options during online exams which are poor in undeveloped countries like Bangladesh. Moreover, Many students are giving exams together in a same house to share the answers which is completely unethical and there is negative impact to other students who tried by themselves." This fact is perfectly exposed by the empirical evidence from the **student-8.**"

Increased the number of student's presence

In the online classes there is much more attendance of the students regarding the physical classroom. In online collaboration, students can engage with the classes from everywhere which was not possible during physical classes. It is one of the best advantages of e-collaboration for the students as well as teacher. During bad weather teachers and students can continue their classes without coming physically in the classroom which is possible only in e-collaboration. ***'During online collaboration we can attend in all the classes from anywhere of the country where during physical classes we had to leave the classes if any emergency aroused.'*** This evidence is perfectly revealed by the empirical evidence from the **student-5.**"

Analysis of empirical data using theory

Online collaborative learning (OCL) theory is taken as desirable learning experience between teachers and students during covid-19. OCL is one of the acknowledged teaching methods in online education.

I use the OCL theory here as theoretical lanes to analyze empirical data. OCL is believed to support three phases of knowledge acquisition and construction. These are discussed here by using OCL:

Idea generation among teachers and students regarding online classes

From my analysis I found that, Teachers and students can work here together, sharing ideas and opinions, discuss a topic and develop a way to understand about a specific topic, constructing collaborative products, increase their self-efficacy, allowing shared rehearsal of learning activities, enhancing their motivation for learning and offering them new comprehensions into teaching approaches.

Idea organizing among teachers and students regarding online classes

From the findings of my theory it can conclude that, students are not always serious about the lectures, unavailability of teachers after ending the classes, without high speed internet facility online collaboration cannot be successfully implemented and proper judgment of the students without developed structure like developed countries is not possible.

Intellectual convergence among teachers and students regarding online classes

From the findings, I can state that as the online collaboration is easy to communicate with both students and teachers so it is easy to handle to mutual understanding and team work to developthe class lectures, online class test and curriculum development which is time consuming in physical classroom. Students and teachers can engage through online collaboration like zoom, duo, Google meet etc. to quick communication to solve any difficulties.

Moreover, practice based learning environment for students can be developed by the implementation of OCL which permits students to acquire knowledge from their peers and tutors. Hence, OCL can also be considered as a viable way to prepare future instructors.

Discussion and Conclusion:

Theoretical contributions

Alqahtani & Rajkhan, (2020) states that for effective e-collaboration in education should be demonstrated the effective planning of curriculum, consistent of objectives and learning strategies. Without appropriate structure of guidelines and plans for online education cannot be much effective to develop the education. Similarly, in my research I found the same obstacles to improve the online collaboration because most of the districts of Bangladesh are not under strong internet facilities so infrastructure of online education is not appropriate for us yet. During this pandemic maximum institutions provided their education by Facebook videos where there is no proper communication between students and teachers. Moreover, for the practical classes of Architecture department, computer science department, Electrical and Electronics Engineering department are not appropriate in online education platform. Technological infrastructure facilities should be developed first before going to online collaboration.

Demuyakor (John Demuyakor, 2020) showed in his research that most of the students of Ghanaian International Students in China are mostly satisfied in online collaboration of education during COVID-19 though they had to pay a high cost to access the internet. Similarly, in Bangladesh most of the students are from middle income family and internet package is expensive regarding the data limit and data validity. Data connection is not still strong enough to connect with the online classes where data disconnection happens frequently and students missed the important lecture and arguments during online classes.

(Gonzalez, T., De La Rubia, M. A., Hincz, K. P., Comas-Lopez,M., Subirats, L., Fort, S., & Sacha, G. M., 2020) experiment the students in two ways like experiment group and control group where experiment group means those students who took part in online education and found the significant positive effect from the students that they improved their academic performance and learning strategies which impacted on their efficiency to improve continuously. Same as in my research I found similar conclusions, students can improve their efficiency if the proper materials and platform could provide in online education then ultimate collaboration will happen and both students and teachers will be satisfied.

Finally, Adnan and Anwar (Adnan & Anwar, 2020) launched a surveyed-on college students in Pakistan towards online classes during COVID-19 pandemic and could not produce positive result due to most of the students are not capable to access the internet. Moreover, students andteachers reported

negatively that classroom socialization and proper interaction were not happening through online collaboration. From my study I can also conclude with similar findings that in Bangladesh students are bringing up with a social environment through school fields, teachers interaction for better subjects understanding which are hampering during online collaboration. Self-efficacy is also going down for the students who are facing trouble to cope up with the technological collaboration with a short time.

Practical Contributions

From the above discussion both teachers and students can improve their future experience. Faculties should be improved their technological skills to provide best services to the students through online platform. Educational institutions should invest in IT infrastructure to provide best support for online collaboration. Beside this, educational institutions should provide some training to faculties about what devices and platform will be the best for online education. On the other hand, students should be taken the classes seriously to be understood properly. Students should make proper interaction in online classes either they are satisfied about the topics or not. To continue this platform to make up the crisis like COVID-19 education system should be improved and government should support to the students. Govt. should provide free internet facilities to the students and network system should be developed. Marginalized students who are not capable to purchase online device should be provided by Government fund. Online lectures should be improved by the faculties that students feel attraction to the classes. Learners and educators must be familiar with Web-based communications such as email, discussion boards and chat rooms before joining online classes.

Limitations of the study

In this study there are some limitations. At first, due to time limitations I could not reach to maximum numbers. Limited students and faculties were included in my interview. Larger sample is less effective to take the final conclusion. Due to pandemic, I could not take physical interview where I had to conduct telephonic interview. Only 5 questions were asked to students and 5 questions to faculties due to time limitations, so more depth information did not come out. In this study I focused only experiences of online classes but there are lots of areas about online collaboration to research to improve. I could not find out the techniques or technological facilities that can be introduced in online collaboration. Marginal students could not engage in this research due to covid-19.

Implications for future research

A large number of teachers stated that many advantages in online collaboration regarding flexible working hour, conducting online courses, adaptability of broad learning style, introducing with easy monitoring styles. So further leading research questions can be on

- How do the faculties maintain their work life balance during e-collaboration where shiftedphysical classroom to online classes?

- How much possible the students development through online collaboration during COVID-19 pandemic?
- What can be the effective role can play from parents and teachers to ensure maximumengagement of the students during online collaboration?

These can be the further research on online collaboration that can be improved the online education systems in future.

Conclusion

Both teachers and students have mixed experience about online collaboration where both parties should be improved regarding online teaching equipment and proper interaction should be increased in the classes to make it effective, for example, increased the number of student's presence. This study argues for some challenges to online collaboration during online classes over physical classroom such as low internet speed and high cost of data connection, lack of seriousness/interaction of the students, technical skills and quality enhancement, unavailability of teachers after classes to solve student's problems, difficult to keep concentration for a longer time, lack of proper judgment during online evaluation. This study also argues for idea generation, idea organizing, and intellectual convergence among teachers and students regarding online classes.

COVID-19 virus created an unparalleled situation in all over the world in all aspects but especially in the education sector. Mostly the educational institutions were shut off for the longer time in different countries where in Bangladesh school, college and university was turned off for almost 19 months. During this time teachers and educational institutions tried to continue their teaching and learning procedure through online platform but none was ready to cope up which created an unprecedented situation. School, college and university teachers and students were not familiar with this platform at all, so it was a great challenge for all to collaborate quickly without waste of time. Educational institutions can provide a more integrated online collaborative learning

experience by conveying real-time, synchronous video conferencing which is possible by using different updated technologies available for online collaborative learning. In the modern world online collaborative learning process is considered as future teaching learning method where most of students can be included from anywhere of the world. Before implementing this technologies and online methods at first teachers and students should be trained up to skip the hassle and continue the education smoothly.

Moreover, many students have not much capacity to purchase mobile, laptops and internet data to continue their education, so government or educational institutions should adopt the policy to provide free internet and digital gadgets to all the students to ensure their participation and make this platform popular among them. Though the online collaborative leaning system is not error free but during this pandemic online learning is the best way to ensure the teaching learning for the teachers and students.

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