

A study on the effectiveness of online learning system during Covid-19 in private universities of Bangladesh

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Abstract: The primary objective of this study is to identify and discuss the challenging factors for online learning to be ineffective amongst private universities of Bangladesh due to the coronavirus pandemic. With an unprecedented move towards online platform due to the pandemic, several challenges cracked up in the education system of Bangladesh. Private universities have been the first educational institutions in Bangladesh to start online semester as a mode of distant learning. A descriptive research planning was employed to discuss the context and no theoretical model was used due to limitation of previously performed studies. The study started with a pilot study phase where personal interviews of some students and faculty members were incorporated. Subsequently, based on literature and online interviews the online survey questionnaire was developed and using purposive sampling technique it was distributed amongst the private university students of Bangladesh. Survey results concludes that, there is a significant loophole to fill up the absence of physical learning system in terms of efficient study materials and design, effective assessment and physical and mental well-being. This study indicates the ineffectiveness of online learning system in private universities. In general, the findings from this research will help the government and concerned authorities to identify and amend the deformities of ongoing online education by taking appropriate measures.

Keywords: Pandemic, Online Learning, Private Universities, Learning Effectiveness

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I. Introduction

As the novel coronavirus is increasingly growing worldwide, WHO announced a global pandemic on 11th of March, 2020. Since then, countries decided that businesses and educational institutions be closed all around the globe in an effort to suppress the spread of the virus. Even though Bangladesh have had experiences dealing with climatic and humanitarian disasters, the coronavirus pandemic is an entirely new problem of a totally different nature and one that will take an extraordinary effort (Islam and Divadkar, 2020). Since this is a new problem, any new issue that may arise will be a significant challenge especially for a third world country like Bangladesh as there are not many researches done on it. In fact, the COVID-19 pandemic left no other option but alternative method of teaching for the world's educational institutions than performing physical class. Therefore, several countries began providing online teaching to students, through numerous online networking channels such as Zoom, Skype, FaceTime, and open edX platforms such as buX in order to encourage online education and restore the usual teaching flow. Albeit the fact that even a deadly global pandemic was not enough to halt the pursuit of knowledge, it did not come without novel challenges. It can be said that the practice of virtual classes is comparatively less effective in terms of learning and lacks clarity of understanding as it is not geared with the same amenities as is the case for face-to-face classes. Students may find difficulties in raising questions in class and having a proactive discussion. Nevertheless, as a developing nation, adapting to online education poses to be a major obstacle for Bangladesh due to numerous technological and administrative limitations (Sarker et al., 2019). As this is a new problem, additional research needs to be carried out in order to highlight the problems with online education specifically in a country which is not used to online schooling. As education remains as one of those essential functions that had to be undertaken no matter the circumstance; thus, the era of online and virtual classes arose. Up to this point, the actions taken by the Bangladeshi government has been admirable, but this pandemic still raises an economic and humanitarian catastrophe (Islam and Divadkar, 2020). The sudden move towards online learning posed major hurdles for educational institutions to arrange online tests and to make sure that students' progress with their studies (OECD, 2020). Researchers learn that there are negative effects on students' eating patterns, physical exercise and sleep cycle because of remote e-exams (Elsalem et al., 2020). Furthermore, whether the curriculum and syllabus has been designed to align specifically with the current needs and circumstances keeping the scheduling of classes in mind is another concerning question as it is typical for students to face problems with time management along with connectivity

issues. For instance, (Sarker et al., 2019) talked about how other drawbacks of online education involving poorly designed learning materials, limitations in interaction and weak internet connectivity greatly contribute to the ineffectiveness of online learning in Bangladesh. Moreover, (Mamun, Chandrima, and Griffiths, 2020) writes about how a private university student of Bangladesh and his mother committed suicide the following day after they had a dispute over the fact that his father insisted him to appear for online exams but he was adamant about appearing for the exams only on campus. Needless to say, the crisis situation has wreaked havoc not only financially and economically, but also deteriorated the mental and physical wellbeing of people to smithereens, which evidently interferes with the concentration and productivity level of students. This only fuels the strain and stress that a 2020 graduate readily feels all the time regarding what to do eventually after graduation and thus, hampers the quality of education received. Lastly, and most importantly, measuring the effectiveness and reliability of the evaluation criteria is a seemingly growing concern as the rates of plagiarism and cheating spikes high. For two-way learning to co-exist harmoniously, students must maintain transparency as the assessor must establish a fair grading policy too. Overall, these are the obstacles and barricades students attending virtual classes face on a daily basis. Thus, the purpose of carrying out this study is to understand the utility of online education and how, amid the pandemic, it might lack characteristics to encourage students to learn to their true ability. This study will help administrators find out gaps and shortcomings in the system that could be eradicated or minimized to a degree that could guarantee a safe and efficient online learning atmosphere.

1.1 Literature Review/Background Study

Response & reactions to online education: The case of world

Covid-19 was declared a pandemic by World Health Organization on 11th march, 2020 (WHO, 2020). The covid-19 pandemic left all the educational institution of world with no other choices but alternate teaching method than conducting physical class. Education sector especially tertiary education has adapted online method to maintain the uninterrupted learning environment. This adaption of new learning method has brought a new dimension of workload and pressure along with dynamic situation (Schroeder, 2020). A case study on Peking University, China revealed that, absence of learning attitude and suitable environment for students creating challenges and obstacles for effective online education (Bao, 2020). Impact of Covid-19 on education sector in Asian region holds more than 60% worse and adverse effect (Tanveer et al., 2020). Also, the stats of their research showed that, 67% participant students indicated negative impacts by the closure of physical classes (Tanveer et al., 2020). In West Bengal, India 70% learners are involved in online learning who reported to be facing depression and poor learning infrastructure (Kapasia et al., 2020). Students feel isolated in online classes due to lack of face-to-face interactions and it has raised physical and mental issues (Wiles, 2020). Online transition has raised issues of the capability of teachers to deal with technologies and conduct classes. Moreover, many universities lack of resources and infrastructure to impose online classes and facilitate the learning environment (Sahu, 2020). Although, learning enhancement through technology is being used from earlier but the evaluation and assessment of learnings are still underdeveloped and needs to be improved in this changing landscape of education (Timmis et al., 2016).

Government & private university response to COVID-19

After the breakdown of coronavirus, the government and Ministry of Education of Bangladesh announced the closure of educational institutes and physical classes from 18th March, 2020 (The Business Standard, 2020). Later, University Grants Commission of Bangladesh in a meeting with Ministry of Education announced about launching online classes for higher education ensuring learning at a distance (Hasan, 2020). Private universities of Bangladesh follow trimester system and operates rigidly with less flexibility in their academic curriculum, which increased the pressure and boosted the difficulties to complete the semester in an online platform (Majed, Jamal and Kabir, 2020). Launching of online education in Bangladesh in such a wide scale is an unprecedented situation which brought several challenges for both the student and teachers (Alam, 2020).

Deficiency of online education: World & Bangladesh

Alam's (2020) case study also highlighted the struggle of students and teachers to adapt the online environment which is an uncomfortable experience for them. Similarly, (Adnan and Anwar, 2020) said absolutely zero physical interaction in online classes has posed to be a major issue in the effectiveness of online learning environment of in higher education. Moreover, (Dutta and Smita, 2020) emphasized how drastic changes in the daily life of students from private universities of Bangladesh due to the coronavirus epidemic has led to various physical and mental complications which translated to poor learning outcomes. On the other hand, (Nguyen, Keuseman and Humston, 2020) talked about the limitations in monitoring during online exams proposed several solutions to prevent cheating activities which raises a big question on the true learning effectiveness of online education. Again, Watson and Sottile discussed in their study on "Cheating in digital age" that it is more likely to be academically dishonest for students in online with the access of internet and

technology. Students are more intended to cheat or preferring more to copy answers from others in online exams as it is less monitored by the invigilators (Watson and Sottile, 2020). There is an uncertainty about the methods and processes of assessments such as projects, assignments etc. for both the students and teachers (Kearns, 2012 and Raaheim et al., 2019). In a snapshot, these factors indicate the degradation of students' online learning effectiveness by attending virtual classes.

II. Methodology

2.1 Conceptual Framework & Hypotheses Development

Apart from the study of literature, one important aspect which came out through personal interviews and survey of the study which is the course design according to online transformation of classes. Changes in improper course curriculum and private universities rescheduling classes into a more concise semester to make up for lost time because of COVID-19 has resulted in the deterioration of online education quality. Even, after continuing for one or two semesters, many private universities did not bring any changes to course design and curriculum which created a negative impact on learning efficacy. Few studies have been done on this research topic and problem where this particular issue has not been highlighted. As the situation escalates, the attempt of learning from home appears to be futile for proper learning outcome due to factors such as lack of physical interaction, limitation and inefficacy of proctored exams, absence of a redesigned course curriculum to an online environment, and mental and physical problems arising from home quarantine. Finally, based on literature review and problems identified by interview, research hypotheses have been identified (Figure 1). Hypotheses have been proposed based on illustrating the relationship between the one exogenous variable and four endogenous variables. Here, the following conceptual framework (Figure 1) presents "impact on learning effectiveness of online education" as exogenous variable and "Lack of physical interaction", "Limitation of monitoring and inefficacy of online exams", "Mental & physical issues", and "Lack of redesigning course curriculum" as endogenous variables.

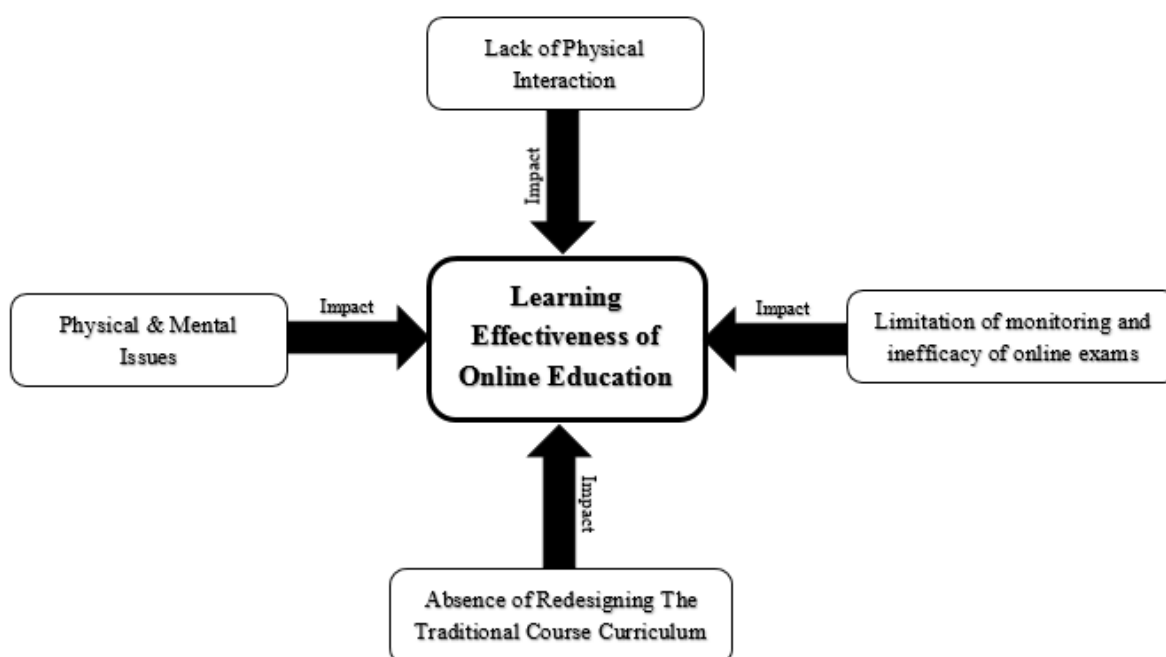


Figure-1

Therefore, based on the conceptual framework identified the hypothesis are as follows:

- Due to lack of physical interaction, learning effectiveness of online education in private universities of Bangladesh may be at fault.
- Due to limitations in online exam monitoring, cheating can be a prime concern and due to inefficacy of online exams, learning effectiveness of private universities of Bangladesh is criticized.
- Absence of redesigning the traditional course curriculum is creating a pitfall for online classes to be effective.
- Mental and physical issues arising from unprecedented pressure of pandemic and online semester may translate to poor learning outcomes in private universities of Bangladesh.

2.2 Research Design

To explore the research topic, this study employed descriptive research planning. To strengthen the study, a combination of qualitative and quantitative research methods was approached.

- Qualitative Research Method: Pilot study phase by interview.
- Quantitative Research Method: Evaluation phase by survey.

2.3 Sample

To come up with proper investigation on effectiveness of online learning, only private university students were chosen as the target population because it was the private universities who first initiated fully virtual learning platform in Bangladesh and have been able to complete their semesters online. Thus, a judgmental or purposive sampling technique has been applied here for the study. 532 students from 9 top private universities of Bangladesh participated in this study (see Figure-2). 500 responses from the students have been chosen as sample size and no strict rules have been followed here as sample size depends on various factors of a study (Muthén & Muthén, 2002). The study covered students from different areas of Bangladesh as many students are staying in their hometown due to closure of universities and other activities. Students from different academic levels of universities and backgrounds are included in the study to come up with a more sophisticated observation along with more reliable and valid study implications.

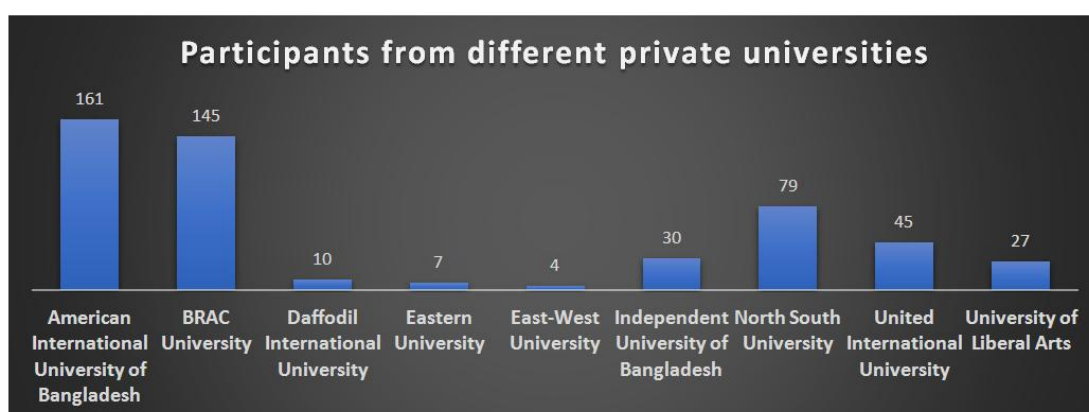


Figure-2

2.4 Measurement and Data Collection

Since there are a limited number of studies and concerns on the perception of effectiveness of online learning in Bangladesh, a pilot study phase has been conducted at first with 6 students and 2 faculty members in the form of personal interviews. Students and teachers from different private universities of Bangladesh who are affiliated with online learning have been taken. Each interview was conducted with a prior invitation over mobile phone and emails. The study tried to explore everyone's perception over processes and effectiveness of online learning and several plots were evolved throughout the interviews. Everyone's opinion has been integrated which seemed to be relevant with the effectiveness of online learning. Based on the responses of personal interviews and study of the literature from national and international perspectives, the conceptual framework was constructed and derived a complex hypotheses type. Later, a survey questionnaire was formed based on the hypotheses and preliminary research. Questionnaire was in structured format and most of them were on Likert scale. Some dichotomous and multiple-choice questions were also used. A structured questionnaire format has been used to smoothly collect the data with more accurate and reliable basis. Survey questionnaire was prepared to know the overall factors impacting online learning and the questions include-

- Equivalence of online classroom compared to physical classroom
- Efforts needed in online class compared to physical class
- Effectiveness and ease of online study materials
- Adjusted course curriculum
- Effectiveness of online assessments
- Physical and mental complications affecting online learning
- Adaption of cheating or any unfair means
- Choice of learning mode (online or physical) when the pandemic ends

Abovementioned key questions were used as an apparent measurement of effectiveness of online education. Integration of qualitative information from personal interviews and quantitative data from survey helped to identify several key variables which were core elements in the effectiveness of online education and

provided some predictions to improve in those areas. Due to the closure of the universities and convenience of reaching to the participants, the questionnaire was created through Google forms. It was circulated through several social media platforms such as Facebook, Messenger and WhatsApp to different academic levels of undergraduate and post graduate students from different private universities of Bangladesh.

2.5 Quantitative Data Analysis Procedure

Quantitative data collection period took 3 weeks to collect the responses of desired number of participants. The whole process was administered in Google forms and all the responses was formatted into a spreadsheet. After analyzing each and every response, 30 responses were excluded from the data due to having inconsistency in the responses which raises questions towards reliability and validity factors. Eventually, with 508 responses, the final analysis was performed. Descriptive analysis has been used to explain the underlying relationship between dependent and independent variables based on hypotheses and responses collected from survey. No analytical model or theory was approached to describe the results of the analysis because of limited number of approaches and reliable models to the study.

III. Results

3.1 Overall satisfaction:

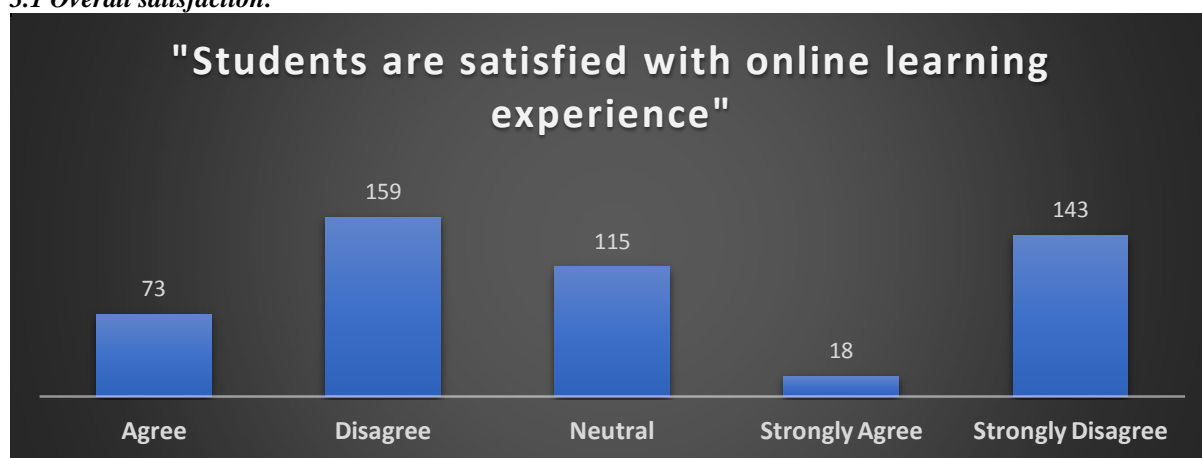


Figure-3

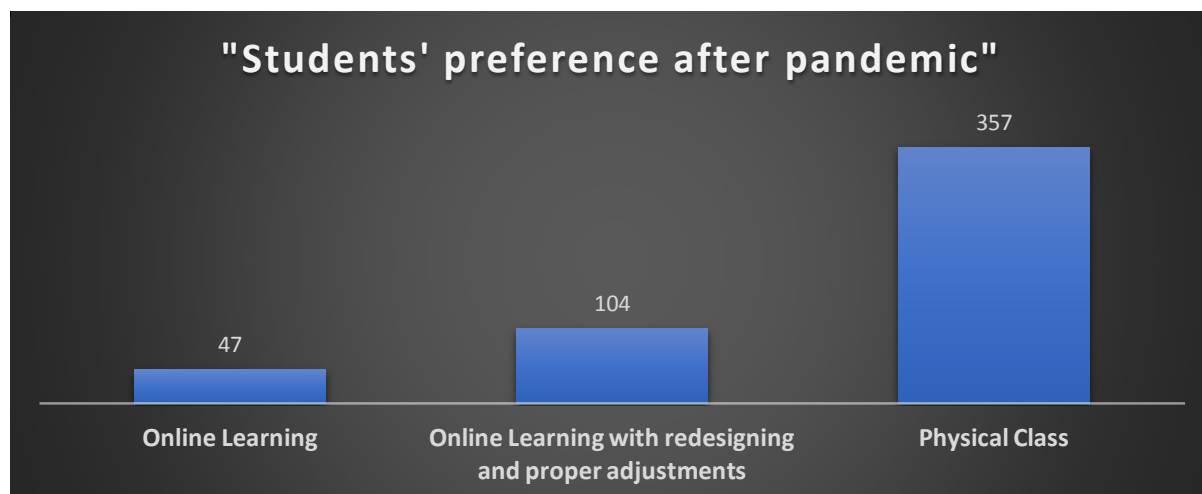


Figure-4

According to the survey results (see Figure-3), 302 respondents out of 508 respondents have unleashed their grievance towards online learning expressing the overall dissatisfaction. On the other hand, some students being of Generation Z era have find some flexibilities towards learning with the aid of technology. Hence, they have agreed with the satisfaction over online learning experience. When respondents were asked about their preference after the pandemic ends, majority of the students (see Figure-4) rejected online platform indicating it's ineffective and unsuccessful execution.

3.2 Online learning vs physical learning:

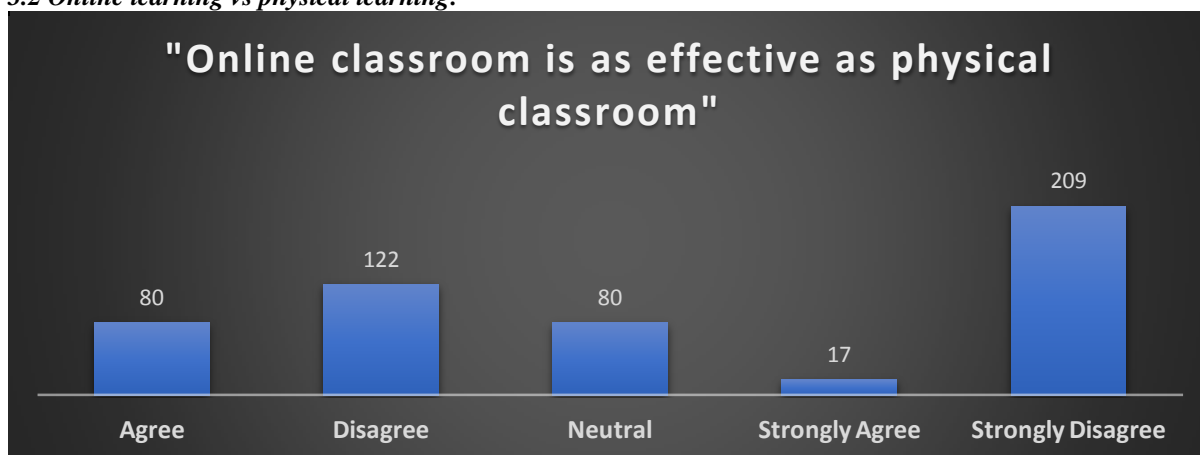


Figure-5

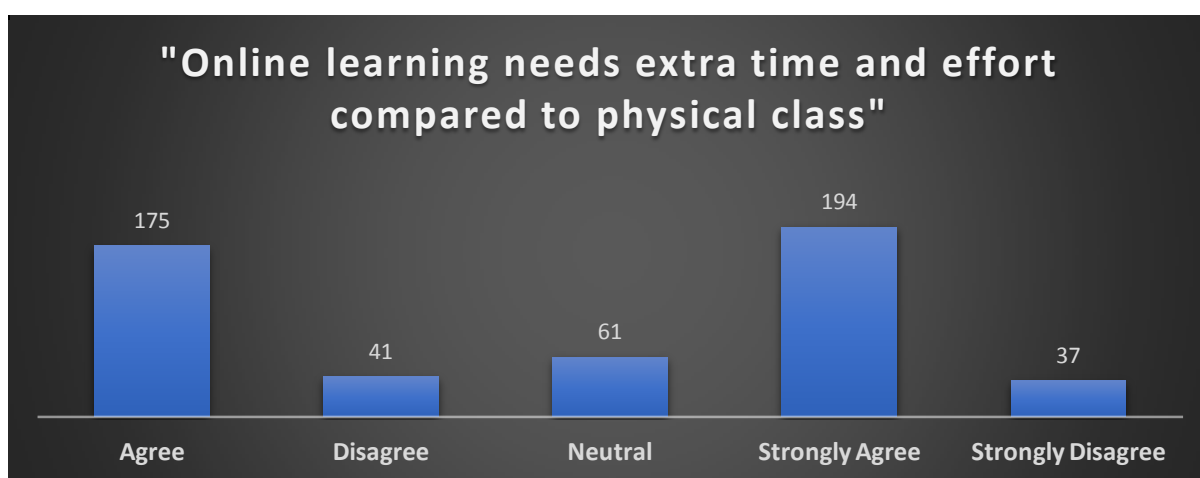


Figure-6

Survey done for the study implicated that (see Figure-5) around 65% students have denied the equivalence of online and physical classroom. It also represented the response of almost 73% students (see Figure-6) who are experiencing the fact of adding extra efforts to receive online education. So, online learning is imposed as a burden on the private university students as a form of new learning platform.

3.3 Study materials and course curriculum:

The response over understanding and ease level of study materials provided in online platforms and adjustment of course curriculum was found to be polarized. Around 43% (see Figure-7) participants have manifested that the materials were easy and self-understanding, while 40% were against the statement. Moreover, 175 students (see Figure-8) have experienced a change in their curriculum design and 202 students attended their online semester with the existing course curriculum. Again, 131 students have experienced some sort of change in their curriculum. So, the overall responses varied from institutions to institutions and departments, also with the universities according to their own adjustment and responses to the situation.

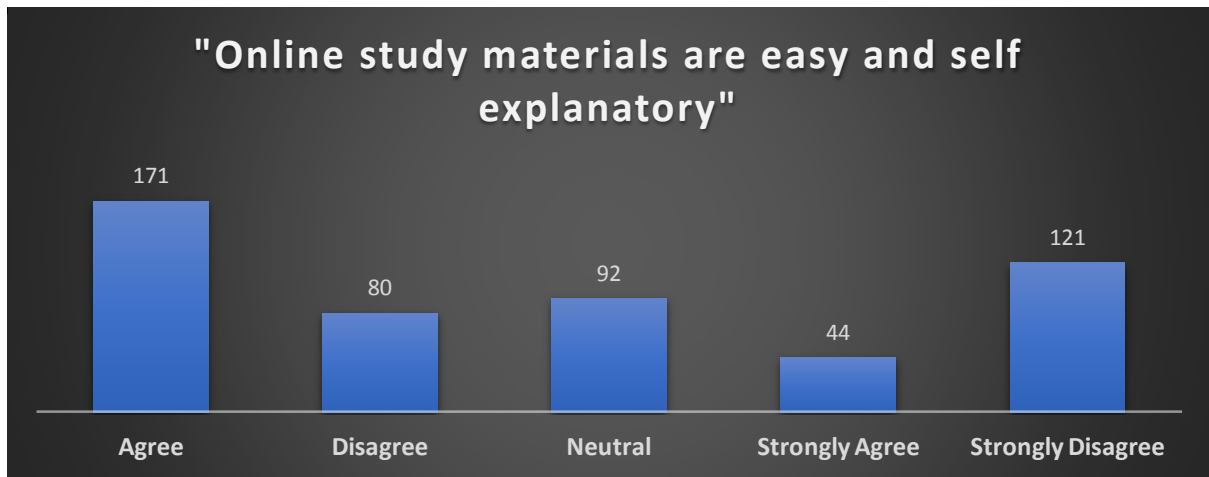


Figure-7

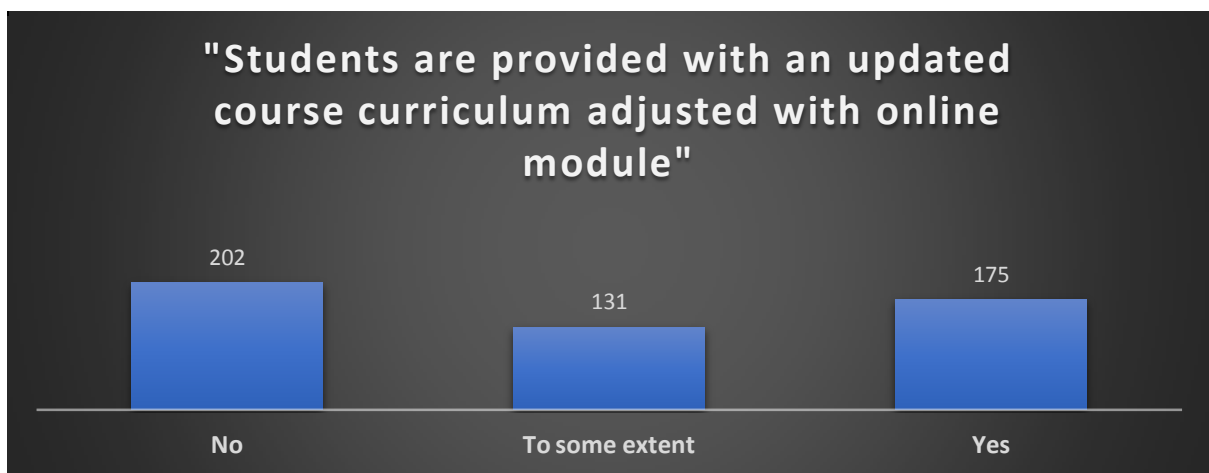


Figure-8

3.4 Efficacy of online assessments:

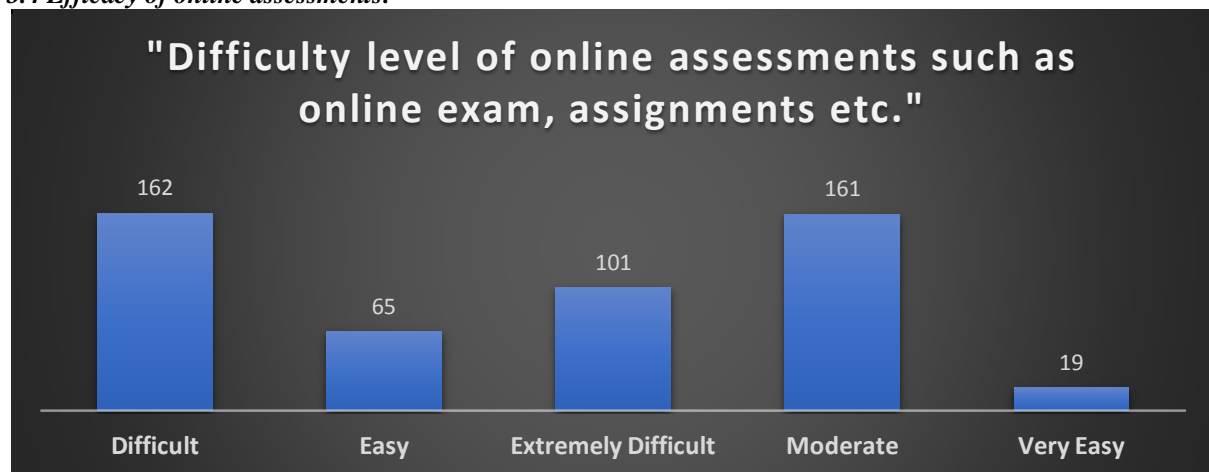


Figure-9

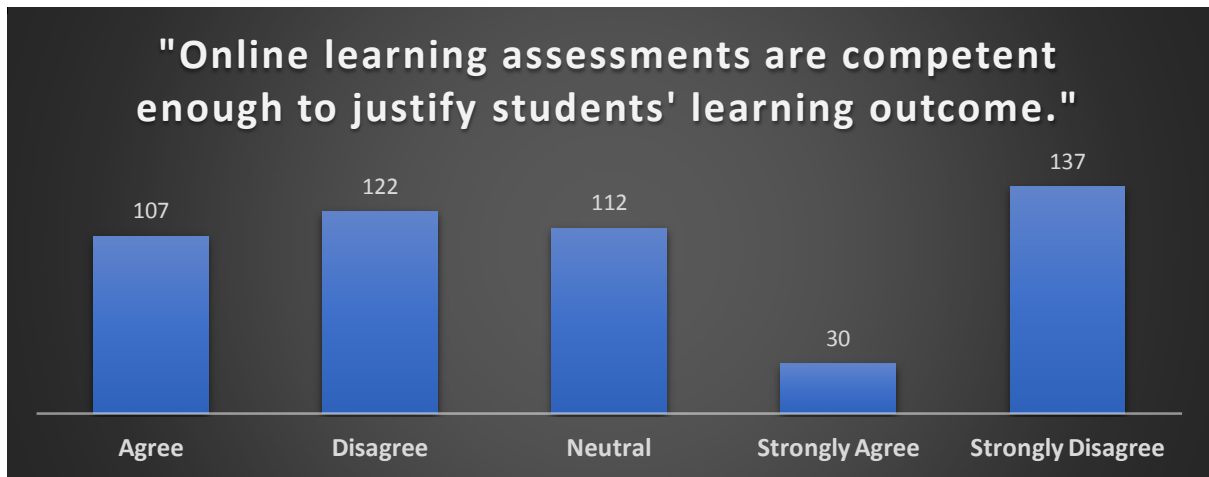


Figure-10

More than half of the respondents (see Figure-9) claimed that they found it difficult to put up with online exams and assessments. Again, around half of the same respondents (see Figure-10) have refused to accept the efficiency and effectiveness of online assessments to justify their learning outcome. Though 27% of the respondents have supported statement of efficacy of online statements. This factor also carried variable responses due to variation of learning subjects based on universities and departments. It is to be noted that despite of being satisfied with the ease level of study materials and course redesign, same respondents rouse finger towards the merit of online assessments.

3.5 Physical and mental reactions:

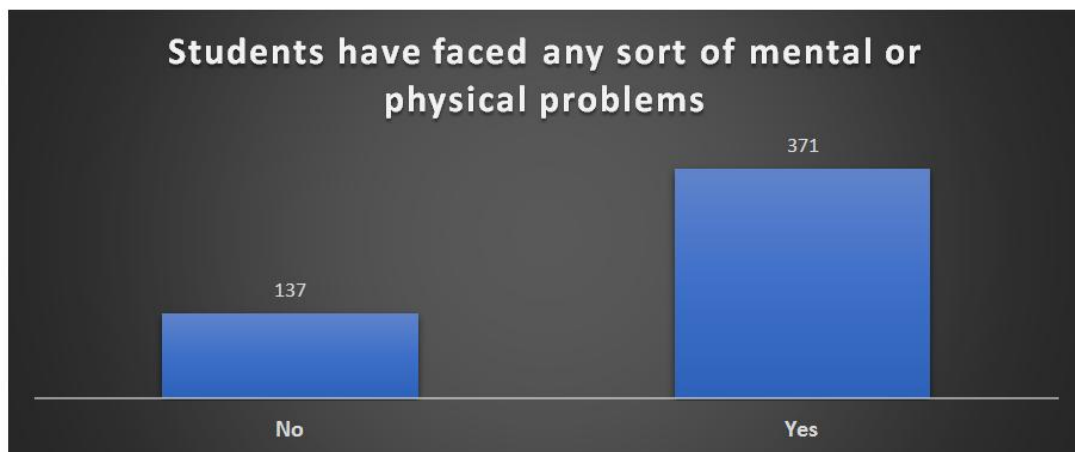


Figure-11

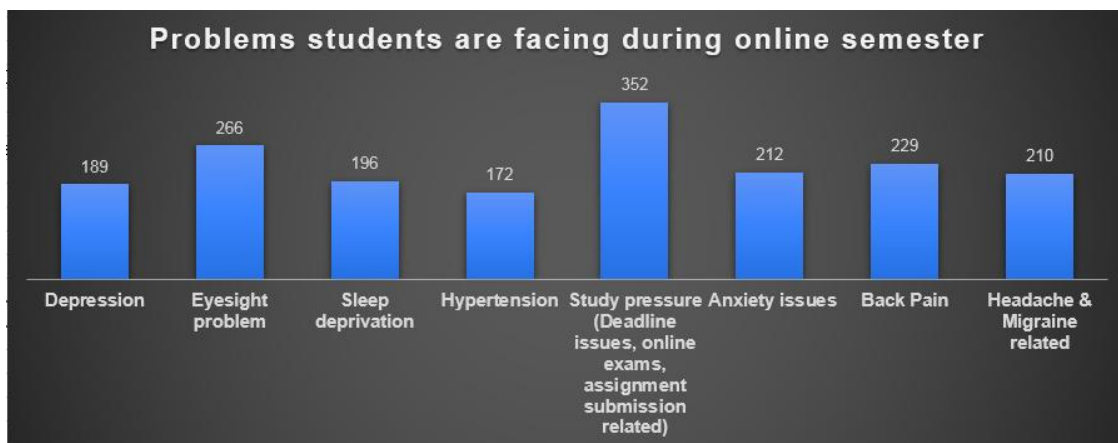


Figure-12

Ensuring the wellbeing of mental and physical health through learning system and facilities is one of the key issues to recognize the students' satisfaction in education system. But here due to online semester three fourths of the respondents (see Figure-11) agreed on facing physical or mental complications. Furthermore, when they were asked with all the choices provided, the majority of the students chose an increase in "study pressure" to be the predominant problem faced during online trimesters. So, it indicates the improper administrative management regarding virtual leaning programs. In Figure-12, the other physical and mental issues which are faced by students at an increasing rate, also raises question towards viability of new transformation of learning platform.

3.6 Cheating in online exam:

Around 64% of the respondents (see Figure-13) agreed on the fact that cheating has become a major drawback in online semesters. Moreover, 226 respondents out of 508 respondents (see Figure-14) have confessed of themselves being engaged in unethical means while attending online exams. Viability of online learning platform have been questioned again and with a stronger point addressing cheating. Majority of the respondents (see Figure-15) identified "Limitations of monitoring" (44.8%) and "Availability of technological factors" (49.2%) as the primary reasons behind the rise in academic dishonesty in online platforms. However, Lack of moral values and low participation in online classes are also major issues for adaption of unfair means by students.

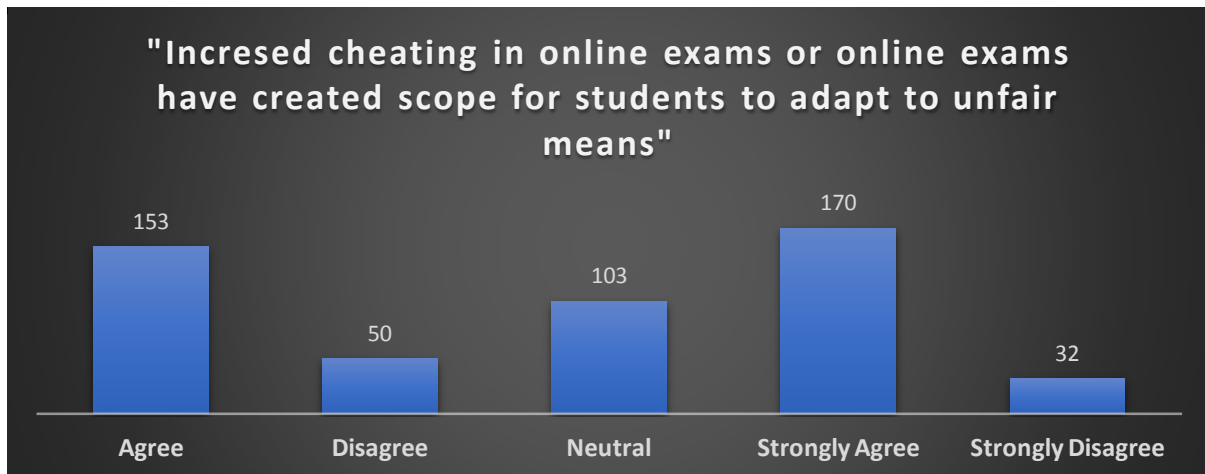


Figure-13

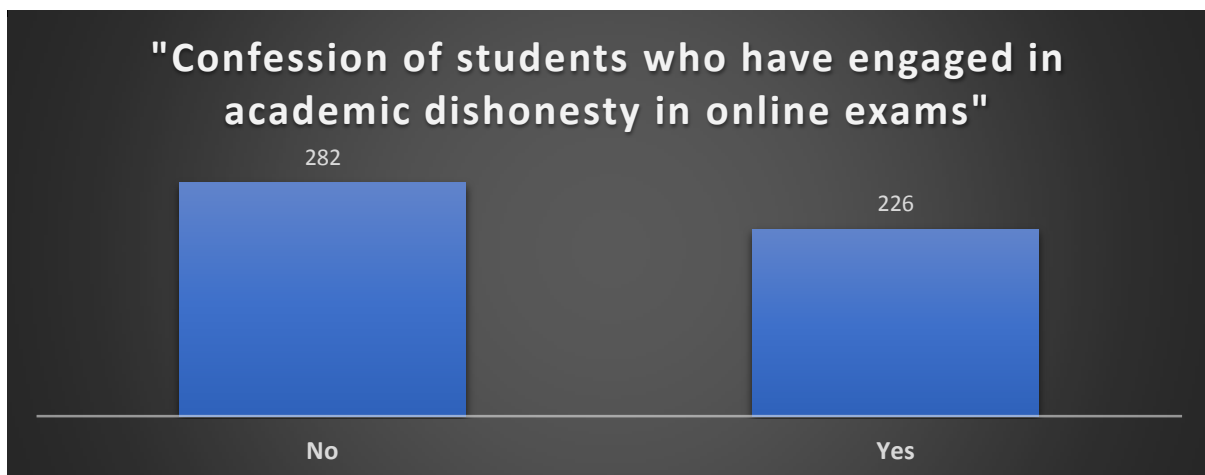


Figure-14

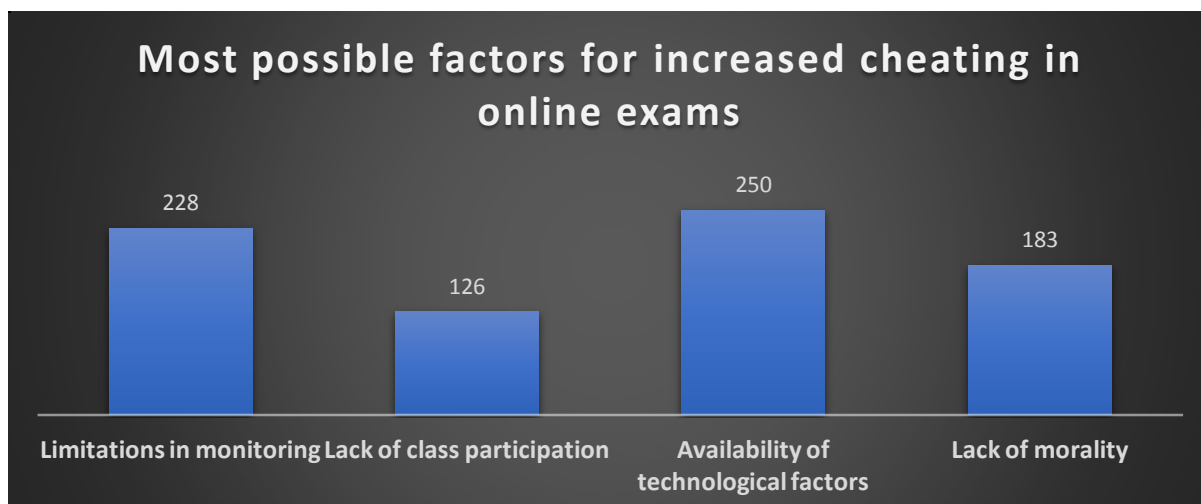


Figure-15

IV. Discussions

The overall response over 'online learning' from the private university students of Bangladesh represents an inefficient administrative management and disturbed learning environments. This directly targets absence of learning effectiveness of this digital platform due to lack of administration and uncomfortable learning environment. First and foremost, due to the coronavirus pandemic, a whole new learning ecosystem and environment have been exposed to students of the private universities of Bangladesh which have been strongly mentioned in Alam's (2020) case study. Accustoming with this unprecedented technological based learning method is challenging and uncomfortable for students which compelled them to give a big no towards online learning as a preference in future. A case study of the Peking University (Bao, 2020) and (Tanveer et al., 2020) has also discussed the same issue. Then the big issue comes with the fact that, online classrooms are never as effective as physical classrooms due to less or no online activities done before, no face-to-face interactions (Adnan & Anwar, 2020) added by technological inefficiency of teachers. Moreover, online learning and teaching involves a diverse array of tools, resources, pedagogical approaches, roles, organizational arrangements and forms of interaction, monitoring and support with many possible combinations of substitution and integration (Bates and Poole, 2003). As a result, students have to give more concentration and effort to pull off proper learning. The major loophole found while assessing effectiveness of online learning is related with course material, curriculum and assessment related. These elements lacked the proper adjustments and necessary changes consistent with online platform than traditional platform. Students are provided with study materials which must have to be suitable for distant learning. But as Sahu (2020) discussed the lacking of university resources and proper infrastructure to conduct classes online, the incontinuity of learning system can be noticed. Online assessments in terms of study materials seemed to be inconsistent as more students found the assessments difficult than how they perceived study materials and course redesign. Unadjusted course design is also responsible behind this as the management and authority of institutes decided to make changes to their curriculum based on their knowledge and resources to pull-off the online semester. It has been done either by shortening the syllabus content or changing the format of the syllabus inadequately for teaching online. Additionally, from the discussion of Timmis et al. (2016), the underdeveloped evaluation and assessment system of online platform can also be mentioned. In a nutshell, the inefficacy of online assessment and course curriculum is largely identified. Furthermore, a big question on the true learning effectiveness of online education is raised by the invasion of cheating in exams which greatly increased in this transformed platform. Limitations in monitoring online exams and availability of technological factors were reasons behind increase of cheating which was presented by Nguyen et al. (2020) and Watson and Sottile (2020). Along with these academic factors, an increase in the mental and physical complications of students also prevail in this online setting. Multiple studies show that test anxiety continues to significantly restrain students' performance in online courses (Bembenuddy et al., 1998; Joo, Lim, & Kim, 2012). In addition to pandemic trauma, various physical and mental complications for students of private universities of Bangladesh has translated to poor learning outcomes. Compromised physical and mental wellbeing of students can never build up an effective learning environment. To sum up, the identified variables for online learning to be effective through our study was denied and questioned in every phase towards its viability.

V. Conclusion

5.1 Limitations

The descriptive results reported herein should be considered in the light of some limitations. Firstly, due to the pandemic we fully depended on online survey method for collecting the responses of our sample. Physical response collection could have provided us with more accurate responses. Next, the survey results might have some inconsistency amongst the responses due to filling up within a very short time and/or understanding the questions improperly. Conducted survey for this research is only based on the perspective of students who are attending online classes. Any teacher or admin level participant is not incorporated here to depict the results. However, the discussions and survey questions have an influence of the interview of teachers and some previous studies from domestic and international level. One important limitation is the conceptual framework of hypotheses and data analytical approach which is simply based on descriptive study without using any models or theory. Lastly, responses can be manipulated through the conflict of personal bias and issues regarding views with the online learning system.

5.2 Further Research Scope

With a few previous studies and models to analyze the online learning effectiveness, this study is not that bad as a starter of the context in case of Bangladesh. In accordance with that, further research could be conducted on a big scale to overcome the limitations of this study. Inclusion of some other group of students apart from private universities such as secondary and higher secondary levels can help the study to measure the effectiveness of online classes more reliably. Likewise, a large sample size can also help the study to be more accurate. Moreover, applying a more sophisticated empirical approach to interpret the analysis with some more variables which may have impact on the effectiveness of online learning can also play a significant role to justify the research in a more sophisticated way.

5.3 Conclusion & Recommendation

The study was undertaken to examine the efficacy of online education amongst private university students of Bangladesh amidst the Covid-19 pandemic. Due to particularly being a developing nation, the effectiveness of online education has been a key challenge in Bangladesh. Initially during March 2020, when the first cases of Covid-19 came to light, educational institutions all across Bangladesh announced temporary closure as per the government's directive. However, it was not too long that private universities of Bangladesh could wait for months for a solution to COVID-19 and opted for the only alternative of conducting semesters online in order to make up for academic loss and to safeguard everyone's health and safety. The pace at which the education sector in Bangladesh is progressing towards online schooling, it has become a serious matter to ponder over. Private university students are disapproving the virtual education approach due to numerous impediments in the online ecosystem. As well as, students have claimed to be dissatisfied with the quality of online semesters for which there has been a drastic fall in the feedback of online courses. In fact, teachers are also struggling due to lack of proper training for the transition to an online environment. Because of a deficiency in planning and proper implementation of online education in Bangladesh the true learning outcome of students are at fault compared to an offline practice. With the 4th industrial revolution approaching faster than ever before there may be more technological challenges forthcoming. And if this continues to be the case, the education sector in Bangladesh could have dark days awaiting. This lack of adaptation to a new curriculum became too difficult for the students to cope with online exams, assignments and with other form of assessments. This poses to be a significant threat to the proper learning effectiveness of private university students of Bangladesh. In order to counter the negativities of online learning atmosphere, redesigning the course curriculum is highly necessary for private universities of Bangladesh. The assignments, term papers and other parameters of class assessments followed in an online semester should be different than of a physical semester. On the other hand, lack of technical expertise is highly common within majority of the faculties of private universities of Bangladesh. Therefore, the private universities should invest more in training the faculty members about the proper use of technology to enhance the learning competency of students. In addition, there should be a balance in the study material and the class assessments because students feel that the difficulty level of class assessments are not at par with the course materials taught in an online semester.

For this reason, class assessments must be made online friendly through trial mock tests so that students can properly adjust to the program of study and the true learning outcome can be achieved. At the same time, proctored exams should be implemented in online examinations where the faculties will be able to track the students' activities in their devices and their movements if a student gets out of the tab looking for answers. Moreover, faculties should be equipped with resources that will help eradicate the limited interaction and increase the level of engagement in an online class. This will help diminish the level of dissatisfaction with remote learning to a certain extent. On top of that, private universities of Bangladesh must focus more on ways to increase engagement in online classroom where students will be motivated to attend the sessions. Rather, the

private universities of Bangladesh should not pressurize the students with too many projects, assignments and exams to a point where students do not get the time to completely understand the lecture materials and quickly learn enough to get by easily. To conclude, this study is believed to provide a valuable contribution towards the development of online education system in Bangladesh, not only for private universities but also for students from any level. This pandemic may be temporary but dependency on technology and internet is growing day by day. So, dealing with the loopholes of online learning must be closed in order to eradicate the obstacles towards growth and development of education system.

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