

# SOCIAL DISTANCING AND THE CHANGING FACE OF EDUCATION - A STUDY ON THE STUDENTS AND EDUCATORS OF KOLKATA

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**Abstract:** 'Ensuring inclusive and equitable quality education and promoting life-long learning opportunities for all' is one of the targets of sustainable development. But the sudden outbreak of Covid-19 has put a major challenge for countries like India where having access to classroom education is a daydream for many children. The rationale that having online classes is better than no classes on the ground of maintaining social distancing has accelerated the educational inequality further. To understand how our students as well as teachers are adopting technology, teaching learning process, their experiences and obstacles faced by them in this regard a survey in various schools, colleges and universities across Kolkata had been conducted from the perspectives of both the groups. Result showed neither teachers nor the students have gladly accepted this new paradigm. Unstable internet connection is the major hindrance as pointed out by both educator and learner. Students have also pointed out assignment submissions, doubt clearing as some important obstacles. Though everyone has accepted that technology driven education will lead to digital divide in the education system, it must be acknowledged this crisis has led to a drastic change in the higher education system.

**Keywords:** Social Distancing, E-learning, Educational inequality, Digital Divide]

## Introduction

"Social Distancing is a set of non-pharmaceutical infection control actions intended to stop or slow down the spread of contagious disease. The objective of social distancing is to reduce the probability of contact between persons

carrying an infection and others who are not infected, so as to minimize disease transmission, morbidity and ultimately mortality"- (Source:Wikipedia). Social Distancing in the past also had been considered as one of the vital steps

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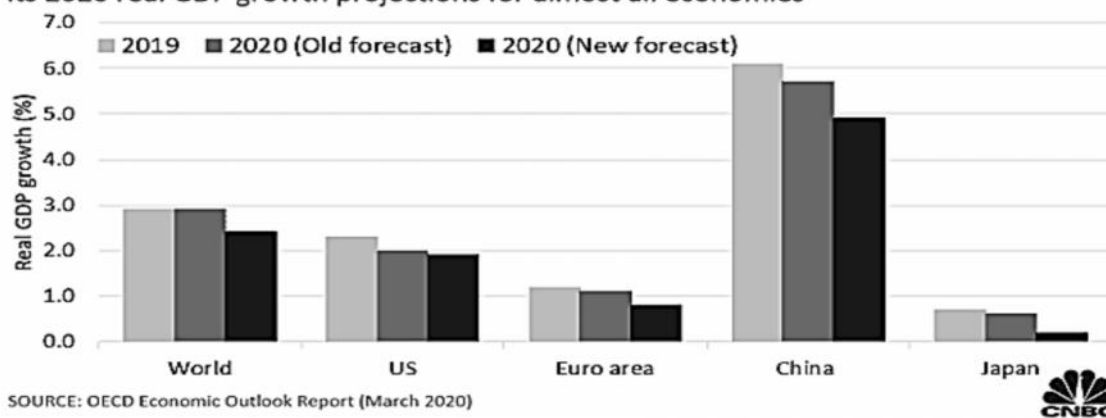
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towards controlling the spread of a contagious disease. Once in 100 years the world gets crushed and devastated by a pandemic. In 1720 plague, 1820 Cholera outbreak, 1920 Spanish Flu and now 2020 Chinese Corona Virus (Covid- 19). Coronavirus (CoV) is a large family of viruses that causes illness. It ranges from the common cold to more severe diseases like Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). The novel coronavirus is a new strain of virus that has not been identified in human so far. More than 70 lakhs people on Earth are currently affected due to pandemic Corona Virus or Covid-19. The number of deaths across the globe has crossed 4 lakhs. People are getting locked into their houses to stop the influence and spreading of the fatal virus. This had affected the market also. Very recently London and Washington have declared financial packages to revive their economy. According to Professor Nil

Ferguson of London Imperial College only in Britain there can be a loss of 5,00,000 lives. Britain is slowly moving towards war like situation. The virus which emerged in the Chinese city of Wuhan last December, has posed a threat to the global economy and financial markets. The disease due to the virus is spreading rapidly around the world, with countries like Italy, Iran South Korea and countries having sophisticated and advanced medical facilities were bound to kneel down losing the battle against the deadly invisible virus. European countries like France, Germany and Spain have also reported Virus Positive cases and the numbers are increasing. Fears of corona virus impact on the global economy have rocked markets worldwide, plunging stock prices and bond yields. The Organisation for Economic Co-operation and Development (OECD) downgraded its 2020 real GDP growth projections for almost all economies.

## Global economic growth slowdown

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### **Economic Perspectives**

The world has suddenly become a different place in the last two months with the Corona Virus taking a host of nations by storm. World Health Organisation (WHO) declared the Covid-19 as a pandemic. It then followed by various countries issuing travel bans, emergencies, lockdowns and many other restrictions are imposed. Even the Indian Government are constantly checking out policies and implementing the same to battle out the Virus. Different measures are taken by different countries including India to move out of this pandemic situation. As far India is considered, it witnessed the first case of coronavirus infection on 30<sup>th</sup> Jan 2020 in the State of Kerala. The fear of the virus attacked Indian Stock market also. Market Capitalisation of BSE-listed firms declined to Rs.146.87 lakhs crores.

Indian economy is currently passing through depression in demand and high unemployment. Sudden lockdown will definitely affect the Indian economy at a large scale. Acceleration in slowdown will be more as compared to that of Demonetisation in the year 2016 and GST roll out in 2017. National Statistical Office (NSO) made a revision in its data on 28<sup>th</sup> February, 2020 cutting down growth rates drastically. In order to handle the situation Finance Minister of India Nirmala Sitharaman announced Rs.1.76 lakh crores relief package on 26<sup>th</sup> March 2020. This package would majorly benefit the unorganised sector workers and daily wage earners including urban and rural poor. But somehow due to delay in

planning as the relief packages came up only after the complete lockdown of 548 districts, many residents tried to made mockery of "Social Distancing" by gathering and visiting markets and established panic buying amongst themselves. The planning of entire lockdown and the timing of relief packages coupled with the fear non-availability of necessary items and groceries for sustaining lives amongst residents in India made a partial disrespect to the concept of Social Distancing. People were found roaming in markets and the Cops trying to implement the necessities sometimes acted harshly. The situation got worsened when the day after the lockdown online suppliers of grocery, medicine and food, like Bigbasket, Flipkart, Amazon, Superdaily, Grofers etc suspended their services across the country. It is expected that post lockdown will experience huge retrenchment of workers and mainly the IT sectors and IT enabled service sectors, MSME's will be largely affected.

Recently Prime Minister Narendra Modi in a campaign of Atma-Nirbhar Bharat (self-reliant India) announced a mega package of Rs. 20 lakh crore. This package mainly focus on labour, liquidity, laws, cottage industries, MSME and agricultural sectors. However the Fifth Tranche of the package focuses on Education sector. It is expected that very soon PM eVidya program will be launched. In this initiative each classroom from Class 1 to Class 12 will be having one TV channel. The initiative will also cover special e-content for students

having visual and hearing impairment. Universities are now permitted to start online courses on and from 30<sup>th</sup> May 2020.

**Education: Where it stands now**

Education system in India has different levels namely Pre-Primary (prior to Class 1); Primary (Class 1 to Class 8); Secondary (Class 8 to Class 10); Senior Secondary (Class 10 to Class 12); and Tertiary level (Beyond Class 12). India is considered to be the centre of Education with more than 620 Universities and 45,000 colleges of various types. In addition to this India has more than 25 crore students going to school ranging from Class 1 to 12. There are almost 15.5 lakhs schools in India, 70% of which are run by Central and State Government. Apart from these there are innumerable Day care centres, pre-primary, primary, professional institutions and coaching centres. All these educational institution were shutdown for almost 3 months on a continuous basis. The reopening of school after lockdown entirely depends upon the State Government and the Union Territories depending on the local situation, the Centre do not usually poke nose to this. In the lockdown phase many institutions tried to help the students with the online engagements and even arranged classes using digital platforms. Even the Government of India initiatives, launched various programs and online education campaigns for the students especially for the students who are supposed to appear for their Board examinations in 2020. It is well understood that education is undergoing

through a radical change and a paradigm shift can be expected post lockdown if we consider teaching and learning. Technology enabling remote teaching and learning will soon take a major jump. Psychologically this will affect the learning capabilities, teaching style and cohesiveness or group learning. Some school replicated their time table and bound their students to sit in front of a device for long hours. This can create severe health related issues and eye problems and also the device on which they use and occupy them for long hours becomes detrimental towards cyber frauds. If we compare online and offline classes and keep technological hazards outside our purview, then the possible threat may come from the word "Interaction" If classes occur offline then face to face interaction, facial gestures and the body languages imbibe the student with encouragement of learning and grasping knowledge faster and more naturally. This happens due to group cohesiveness and the sense of togetherness. While communicating something to student, facial expression, eye contact, change in pitch and tone of voice plays a vital role. All this is not possible if education happens out to be through online mode. We can become smart using smart phone, tech-savvy using various technologies, advanced by implementing remote learning, but we will have to keep in mind that using digital platform helps in learning which is remote. We need to quickly understand how we can mitigate these disadvantages using digital platform in teaching and learning things. We need to use

technology in such a way so that human touch and the sense of togetherness are kept to an acceptable level. As per Mehrabian model which is called 7-38-55 Rule, only 7% of what we communicate consist the literal content of the message. Voice, tone and volume take

up 38% and 55% of communication consists of body languages. So we can conclude traditional teaching and learning will have to adjust accordingly benefiting both students and the educators amidst the virtual world of Flipped Classroom.



These are some of the common platforms e-resources and channels which helped students and teachers nationwide during the lockdown phase. However the problem is deeper now, the presence of websites and platforms are not enough for the students and even for the teachers post lockdown. Educators must seek the relevance and how the technology is affecting the learning capacities of their students. India has the calibre and capacity for technological development but the question is to be asked are these technologies enough for educating Indian students, uplift their morale and encourage them as learners. India should

take proper care for the health and hygiene of the students through various measures then only India can reap the benefit of the technology. India should first arrange for digital literacy campaign for teachers, health and hygiene measures inside educational institutions and suitable health care measures for all the staffs including their family members.

The present study is undertaken to access individual's attitude towards social distancing and its effect on normal social life, remote learning and changes in educational strategies and systems in Kolkata. The survey also assesses the expectations of teachers and the students

from the newer version of teaching and learning

### **Review of Literature**

In this section several researches highlighting the challenges and obstacles of e-learning in the backdrop of Covid-19 have been considered from international to Indian perspectives. The literatures have served groundwork of the study.

- Wikramanayake (2005) in his work mentioned that educators must be aware of available technology and shall take initiatives to implement the technology for teaching students.
- Jeong and Brush (2008) established that the relationship between satisfaction of students and social presence is not statistically significant. Rather the critical factors revealed by the study which affect student perception of collaborative learning are communication medium, course structure and emotional support.
- In the research work of Shu-Sheng Liaw (2008) it was found that perceived self-efficacy is a vital factor influencing satisfaction of learners. Behaviourally learners put reliance on both perceived usefulness and perceived satisfaction for evaluation e-learning system.
- Ward et al (2011) pinpoints that teachers are to be provided with opportunities which are necessary for them to explore and teach students. This will be possible only if policy makers of Information and Communication Technology (ICT) gives due importance.
- Fransson et al(2018) in their study

pointed out that teachers differ in capabilities to utilise digital platform. It is concluded by the researchers that a teacher with a certain level of digital knowledge and competence especially those who have integrated and equipped themselves with the suitable technologies are well placed to gain from digital platform and their acceptance from the student's perspective will be much higher. However, the study further claims that sometimes digital technologies are erroneously perceived as indicators of teacher professionalism.

- Shah (2020) in a letter raised a question on credibility of online teaching. He pointed out that less than 0.01% Indians can afford the luxury of adequate space at home, peaceful surroundings, unlimited access to high-speed broadband, an army of latest electronic gadgets, mastery over hardware and software, and complete peace of mind to have online classes.

### **Objective of the Study**

- a) To identify how students in Kolkata are practising Social Distancing and carrying out their education during and post lockdown and how their educational institutes including the teachers helped them in achieving so.
- b) To identify the problems associated in e-learning or remote learning in comparison to the offline traditional teaching and learning.
- c) To identify the expectations of teachers and also students in post lockdown phase of teaching and learning.

d) To understand the different strategies that can be implemented by educational institutes in Kolkata in order to face the paradigm shift of teaching and learning from face to face physical interaction to remote learning.

### **Methodology of the Study**

For the study, data had been collected from both primary and secondary sources. Purposive sampling method is employed for collecting data. Primary data was collected in the month of June 2020. Through two separate sets of questionnaires responses from 50 teaching fraternity and 206 students had been collected from different institutions in Kolkata. The primary data is analysed by employing statistical tools of simple percentage analysis. Secondary data is gathered from various reports, periodicals, internet and newspaper etc. Their responses are analysed using IBM SPSS version- 26.

The Principal Component Method is considered for the purpose of determining minimum number of factors that would account for maximum variance in the data collected to understand the problems faced by students in accepting the newer version of learning. Factors with Eigen value(s) greater than 1 were retained and others were ignored. For the analysis *Scree Plot*, a graph of Eigen Value were constructed for diagrammatic view of the acceptance and rejection of factors contributing to the problems faced by students relating to changed face of education. For simplicity and interpretability Varimax Rotated Factor Matrix had been considered.

### **Education in the Time of Isolation**

Practicing social distancing is a huge challenge. Especially for the people of India who always like to be around people. Be it a social function, wedding ceremony, religious festivals or even a birthday party we always like to be around and with our close ones, our relatives. Our sentiments have grown up in such a way that we feel broken or incomplete if there are no people around. From our very childhood we have seen and familiarised ourselves in to such an environment, where we have seen and enjoyed something called family value and presence of people around. In our lifetime we meet across numerous people, some in workplace and some in school, colleges, some are very close and some turns out to be worthy enough to be present in social sites. Whatever it may be we as Indians enjoy gatherings, festivals and meeting people and it becomes really difficult for us to suddenly adjust ourselves and move away from people around, isolating ourselves in locked rooms. What could be the aftermath of this practice is worthy to understand. We are isolating ourselves; fear has engulfed us as number of COVID – 19 positive cases in the country is rising. Even though we are maintaining social distances, are we really safe? May be we are trying not to spread the fatal virus, but are we not disturbing our mental peace? Are we not engulfing ourselves into depression? Are we not treating our daily existence as a mere time passing events, waiting for the time when it will be virus free again? Are we not

endangering ourselves in to hopelessness? There are a lot of questions waiting answers. Central theme is that are we thinking about the aftermath of this isolation, this social distancing? Some may argue that social distancing has paved the way for someone very busy to be with family with children. Some may ..... *“Ghar pe baitho, kaho piyo mast raho”* (Remain in home, eat, drink and enjoy). But little we think that the aftermath will be more serious. Some may lose their jobs, some may be bound to relocate in search of new jobs, some may be in depressed state of mind and some may find it difficult altogether again to climb the ladder. Many companies by now have embarked upon “Work from home” strategy. Working from workplace compared to working from home, does the productivity and efficiency remains the same?

Social isolation can increase the risk of a variety of health problems. This includes heart disease, depression, dementia and even death. Julianne Holt-Lunstad a research psychologist at Brigham Young University and his colleagues determined that chronic social isolation increases the risk of mortality by 29%. What can be the reason to these health disturbances just because someone is asked to isolate him or her? It was found in research that having a friend presence can reduce a person’s cardiovascular response to stressful task. There is a correlation between perceived social connectedness and stress responses. As per a recent report from the National Academy of Sciences, older generations may be more susceptible for this isolation. Older

generation will fear about loss of family or friends, chronic illness, and sensory impairments like hearing loss which will make more difficulty to interact. Mere Silence will prevail everywhere. With people talking less and interacting less, sharing less ideas., emotions and expressions and all will get piled up with no one to share. However all people will not be effected to this. People generally are remarkably resilient. The example of US prisoners during the Vietnam War who were confined in tiny cells called “tiger cages” sometimes in water up to their chin is worth taking here. Prisoners who believed that, no matter how bad things were, they would survive and the war would eventually be won had better mental health later on in life. So the mantra is remaining Optimistic which can ensure long term good health, whatever the situation is. So the fear of unknown and the deadly silence can be broken if one remains optimistic. But here lies the difficulty not all person are like those of US prisoners.

Technology now days are acting as saviour from this deadly silence. People now are commuting with each other on social platforms. Texting in whatsapp and using Facetime has really taken up some worries. We are fortunate enough to live in an era where technology allows us to see, hear, touch and feel virtually. But non-verbal behaviour cannot be undertaken by virtual medium. Some researchers argue that even body languages, gestures and change in tones and pitches in voice are important for any sort of communication.



French sociologist Emile Durkheim used the phrase “collective effervescence” to describe the shared emotional excitement people experience during religious ceremonies. The feelings of gathering and cheering up for a team in a sport have the same sensation. We can reinforce the idea that we are something larger than ourselves, when we are amidst a group, sharing common feelings. Our voice multiplies and joins the thousands. We feel united. Isolation keeps us away from these feelings; it contrarily tells us that you are alone. Our voices shimmer day by day, we feel lost and silence prevails and triumphs.

As far as education is considered dangerous side is that due to lockdown and Corona virus a generation education is turning out to be disruptive. Some States planned to use Doordarshan, All India Radio promoting audio-based learning among students. Continuation of education is now a headache to Ministry of Human Resource Development and various other regulators such as CBSE, NCERT etc. They are constantly devising fruitful strategies to come out of the situation. Unfortunately low expenditure and lack of seriousness on Education sector in India is adding to the problem. Alternative academic calendar issued by NCERT states four-weeks of activities at home encompassing various subjects. For senior students i.e. students from Class V onwards will have to get their education through online mode. They will have to adjust themselves with the merits and demerits of remote learning. Some States are planning to use resources suggested

by MHRD and e-pathsala. However there has been hardly any discussion relating to problems one might face while implementing online education. The 75th report of National Sample Survey Office (NSSO) highlights that 23.8% of household in India are equipped with Internet facilities. Rural availability of the internet is 14.9% and in urban areas 42% of the household are having internet amenities. But the problem is out of 23.8% household having internet facility only 20% are able to use the tool. In this scenario role of parents to guide their ward with suitable and timely education is an important challenge. Just imagine a student whose parents are both working. The current models of education as given up by NCERT includes that process of teaching must imbibe the students with qualities such as analytical and logical reasoning. This model of NCERT assumes that parents must be intellectually strong in order to impart education to their children. However NSSO surveyed that 26.1% of the population above 15 years of age is illiterate. A whopping 77.4% of the Indian population may not have such calibre or education required to educate their kids. Situation in rural India is worst with 69.6% not literate even to middle school. Closure of school affected the daily nutrition of the students as mid-day meal initiatives came to a halt amidst lockdown. More than 12 crore students across the country were under the radar of mid-day meal schemes. Mid-day meal is considered to be an important factor contributing towards increased school enrolment. As per reports by PRATHAM students will find difficulty in resuming

school as they will be less confident after a gap of almost half an academic year. As per CMIE 11.9 crore people have lost their jobs within two weeks of the lockdown. Since there were job cuts due to lockdown, parents of the disadvantaged household will spend less for educating their children.

**Analysis and Findings**

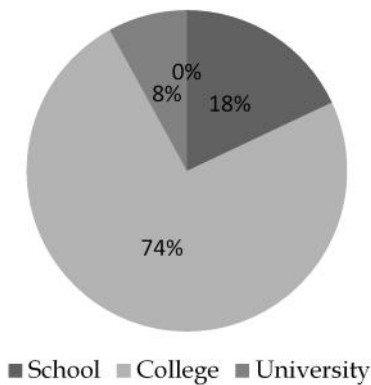
**From Teachers’ Eye**

To get an idea about the perception and experience of taking online classes and the

views on remote learning and teaching including changing face of education educators from various Schools, Colleges and Universities around Kolkata have been surveyed. 50 teachers from various school, colleges and universities responded to the questionnaire targeted to them. Out of the total respondents around 74% are associated with various government, private and autonomous colleges, 8% from universities and 18% from various schools (especially from class 9 to class 12) of Kolkata.

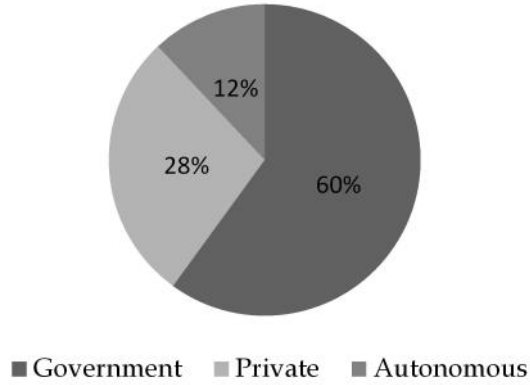
**Fig 1: Nature of institutional attachment of respondents**

**Institutional Attachment**



**Fig 2: Type of institution of respondents**

**Type of Institution**

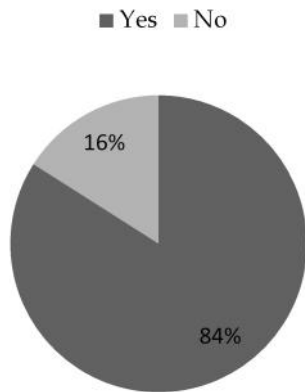


Around 84% (42) of teachers welcomed this new paradigm of education and took online classes during this lockdown period. But their overall experience is varied in nature. For 32% of faculties the

experience is satisfactory whereas for 44% it is good. Figure 3 and 4 represents the views and experiences on online classes respectively.

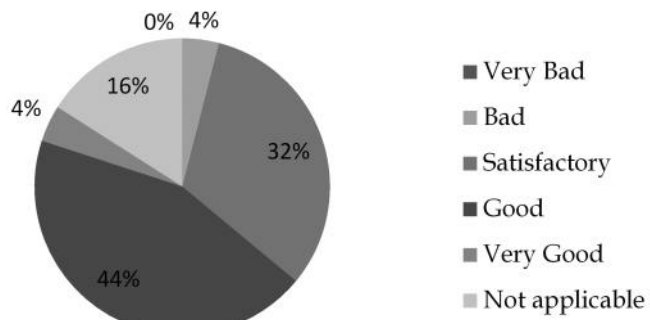
**Fig.3: Views on Online classes**

**Taking Online classes**



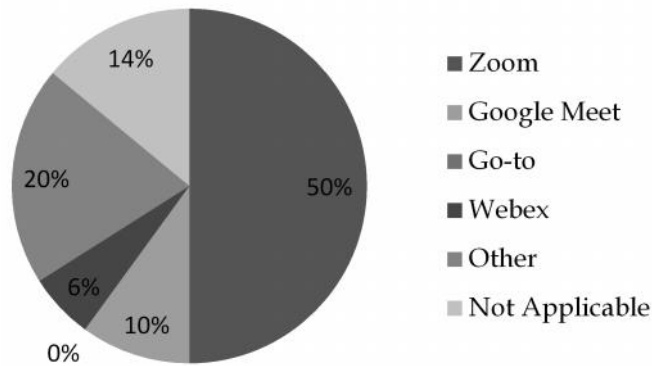
**Fig: 4 Experience on Online Classes**

**Online Class Experience**



**Fig.5: Platforms used for online classes**

**Platforms Used for Online Classes**



Around 50% faculties used Zoom as a platform for taking online classes and rest 50% used various other types of apps like Google Meet, WebEx etc. as evidenced from Fig.5. Zoom thus is so far the most preferred platform among teachers to

deliver their online lectures and share their teaching materials to students. However from the research works of G Fransson *et al* "Digitalise and Capitalise? Teachers' self-understanding in 21st century teaching contexts", teachers

differ in capabilities about how they utilise digital platform.

This online teaching has enormous potential to provide accessible and quality education. But proper internet connectivity, sound technological knowledge among facilitators and students and more importantly self-disciplined students can only make this

initiative a grand success. To understand the level of obstacles faced by the teachers, factors like availability of internet, technological knowledge, interacting and managing students, capacity to take practical classes and assignment checking have been considered. A mean score analysis is conducted based on the responses obtained.

**Table 1: Degree of Responsiveness on Various Obstacles Faced by Teachers**

Internet connectivity (F1)	1	1	5	21	22	50
Technical Knowledge (F2)	4	7	12	23	4	50
Interaction students (F3)	3	12	14	13	8	50
Practical class (F4)	1	2	13	13	21	50
Assignment checking (F5)	5	9	15	15	6	50
Managing students (F6)	5	13	8	13	1	50

Source: Primary Survey

**Table 2: Mean Score Analysis**

Factors	Mean Score	Rank
Internet connectivity (F1)	4.24	1
Technical Knowledge (F2)	3.32	3
Interaction students (F3)	3.2	4
Practical class (F4)	4.02	2
Assignment checking (F5)	3.16	5
Managing students (F6)	2.84	6

Source: Primary Survey

On the basis of the responses shown in Table 1, mean score has been calculated in Table 2 and the factors were ranked accordingly. The factor that got major attention was internet connectivity. Amphan super cyclone can be the evil acting behind teachers choosing this option or strongly agreeing upon this option. Kolkata after Amphan super cyclone witnessed huge crisis over electricity and internet. What so ever internet is the key factor for any remote teaching and learning. Online education can prove to be effective only for those who can get internet access. Considering huge part of rural India internet accessibility is a big challenge in front of West Bengal government. Taking practical classes especially for under graduate students is another big challenge. For lab based teaching and learning things will get more complicated Minimal computer knowledge is the need of hour. There is no doubt that these types of obstacles will definitely create digital divide leading towards educational inequality. 68% of the respondents' agreed whereas 28% expressed doubt about educational inequality through digital divide.

Another important factor is adequate infrastructure in institutions. Initiatives taken in the college level during this lockdown phase were mostly by the faculties themselves. But for long term planning huge infrastructural investment is required. Around 36% of the respondents said their institution doesn't

have those facilities. If infrastructural problem prevails in city like Kolkata then it is quite obvious that rural institutions are lagging much behind.

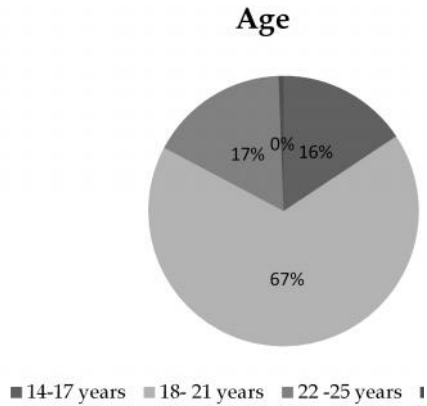
Online classes during this crisis period are definitely better than no classes but this can't substitute classroom lectures.84% of the respondents said that online classes are not as effective as offline classes. It is to keep in mind that all the students are not meritorious and efficient.

Though considering the current uncertain situation majority expected combination of both online and offline classes in the upcoming session because education must go on.

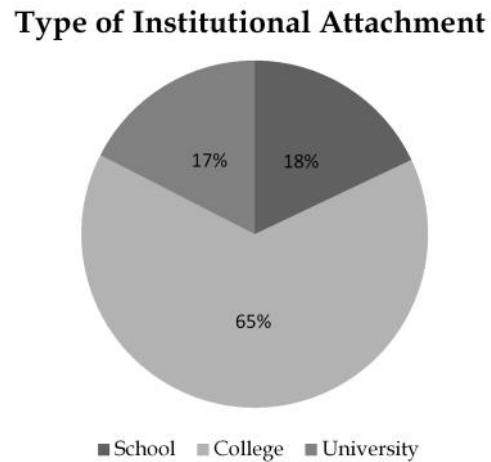
#### **From Students' Eye**

The paper also attempts to identify how students in Kolkata are practising Social Distancing and carrying out their education during and post lockdown and how their educational institutes including the teachers helped them in achieving so. The study also aims to understand whether students have really welcomed the changed face of education and their level of acceptance in relation to remote learning. In order to do so we have collected responses from 206 students from various schools mainly from class 9 to class 12(18%), colleges (65%) and universities (17%). Among the respondents around 16% students are of 14- 17 years of age whereas 67% and 17% are from 18-21 years and 22 -25 years age groups respectively as evidenced from Fig6 and Fig7.

**Fig 6: Age-wise Distribution of students**



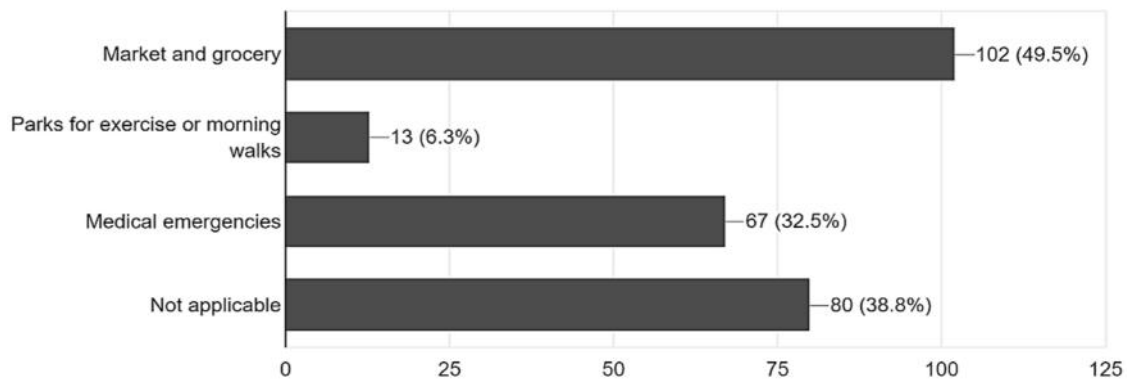
**Fig 7: Type of Institutions**



Practicing social distancing, wearing masks have become the new normal. "Stay home and stay safe" is the new anthem. This locked down scenario has changed the lives of the students as well. Around 99% of the respondents are with their family during this phase. 49.5% of

them visited market place followed by 32.5% who were out of their home to meet the medical emergencies. Though 38.8% preferred to stay locked indoors. Fig 8 shows the places visited by respondents during the lockdown period.

**Fig 8: Places visited during Lockdown**



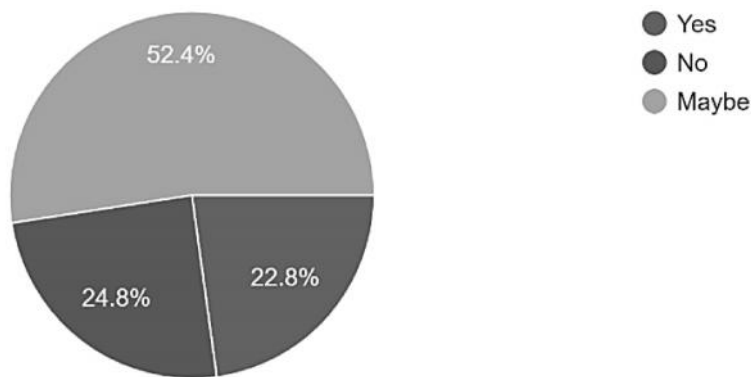
This new normal has changed our lifestyles as well. Students were forced to do jobs which they were not accustomed

to. 35.9% students said that they are spending more than 50% of their time on daily tasks which they were not

accustomed during normal time. Interestingly majority of them pointed out that the social distancing will hamper group learning and cohesiveness. French sociologist Emile Durkheim used the phrase “collective effervescence” to explain the joy and happiness a person gets when attached to a group. In the new forms of education students will definitely

miss their classmates, their presence around and most importantly the excitement and competition of learning and gaining knowledge together. As per Fig.9, 22.8% students said that the social distancing and being locked down in a particular place can lead to depression and other clinical thoughts though 52.4% of the students were not sure about this.

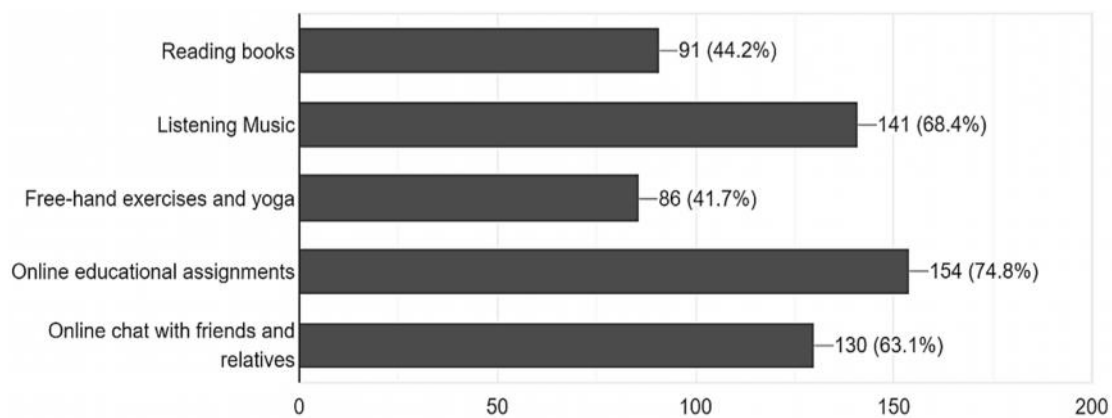
**Fig 9: Response for Depression**



During this time maximum number of students is spending their time submitting online assignments, listening to music and chatting with friends and relatives mainly.

Fig.10 shows the percentage of students spending their time into different activities.

**Fig 10: Activities of the respondents during lockdown**



Student's response also confirms that there has been a huge paradigm shift in education. 71% responded that before this pandemic they have not attended any online classes. 74.8% of the students acknowledged that their institutions have provided study materials during this lockdown period. 51% of them are attending 1 to 2 classes daily whereas 21% are joining 2 to 3 classes on regular basis. However majority of the students, 69% said that they do not prefer online classes over physical classes.

The paper also tried to identify the problems that are faced by the students or may be faced by them later on while dealing with the online classes. The problems that they may encounter or have already encountered due to remote learning had been captured in some

factors as considered in this paper such as unstable internet connectivity, clearing doubts without face to face interaction with the teacher, insufficient communication with teachers, online assignment submission, attending practical classes, absence of academic environment at home and in-disciplined participants in the online class.

The value of the KMO was .805 which exceeded the factor analysis validity threshold value of 0.5 which is considered as a normal acceptable limit and an adequate measure of sampling. The threshold limit was supported by Bartlett's test of Sphericity which is significant at 0.000 which proved that the outcomes obtained were significant as shown in Table.3

**Table 3: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.805
Bartlett's Test of Sphericity	Approx. Chi-square	400.779
df	Sig	21
		.000

Source: SPSS, Primary Data

The inter-item correlation of all the 7 variables (Table 4) shows the pattern of relationship among inter-item. Doubt clearing and communication of teacher had been found to be highly positively

correlated. Table 4 also depicts that the relationship between in-disciplined participants and absence of academic environment is positive.



**Table 4: Correlation Matrix**

	Internet connectivity	Doubt clearing	Communication teachers	Assignment submission	Attending Practical classes	Absence of academic environment	Indisciplined participants
Internet connectivity	1.000						
Doubt clearing	.408	1.000					
Communication teachers	.393	.685	1.000				
Assignment submission	.098	.333	.367	1.000			
Attending practical classes	.325	.450	.348	.302	1.000		
Absence of academic environment	.401	.480	.416	.263	.355	1.000	
In Disciplined participants	.281	.355	.319	.120	.224	.491	1.000

Source: SPSS, Primary Survey

Table 5 depicts that there are 2 components with initial Eigen values greater than 1. These components cumulatively accounted for 59.800% of the variations in the actual variables which is greater than the minimum acceptable limit. Table 5 also suggests that

only two factors had associative relationship. Cumulative value of rotation and rotation sums of squared loading also equalled to 59.800%. This ensures that initial solution has not been lost due to latent factors. This also ensures suitability of the extraction method.

**Table 5: Total variance Explained**

Initial Eigen Value			Extracted Sums of Squared Loadings			Rotation Sums of Squared Loadings			
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.185	45.502	45.502	3.185	45.502	45.502	2.173	31.038	31.038
2	1.001	14.298	59.800	1.001	14.298	59.800	2.013	28.762	59.800
3	.787	11.237	71.037						
4	.691	9.867	80.904						
5	.577	8.249	89.152						
6	.463	6.608	95.760						
7	.297	4.240	100.000						

Table 6: Communalities depicts the observed variance proportions in every item as regard to the other items. All extraction values are greater than 0.4 and

closer to 1 which signifies satisfactory results of extraction communalities obtained through principal component analysis.

**Table 6: Communalities**

	Initial	Extraction
Doubt Clearing	1.000	.686
Communicating with Teacher	1.000	.633
Assignment submission	1.000	.718
Attending Practical classes	1.000	.447
Absence of Academic Environment	1.000	.612
In- Disciplined Participants	1.000	.596

*Extraction Method: Principal Component Analysis*

Table 7: depicts that Component 1 consists of 4 items (In-disciplined participants, Absence in academic environment, Doubt clearing and Internet connectivity) being greater than 0.5 and Component 2 consists of 4 items (Doubt clearing, communication with teachers, assignment submission and attending practical classes) being greater than 0.5. This clearly states that online classes alone are not enough to quench the necessity of a student's doubt. The word doubt covers a major area. However confirmatory analysis can further unveil the areas associated to Doubt Clearing or sub types of Doubts of students can be a good path to investigate which is however not covered in this study. In-disciplined participants (may be due to the fact they

are new to this system of education) is the better representative because it is less correlated with the second component. The second component is highly correlated with the Assignment submission which clearly points out the student will face difficulty in submitting their assignment online. From the teachers' perspective evaluating the assignment can also create certain hindrances. Teachers' may be psychologically biased to offer good scores to their students amidst lockdown which is in a way an improper way to evaluate a student. Proper dissemination of good and poor students will not be possible. Even a poor student in the newer version may be evaluated with high scores which he doesn't deserve.

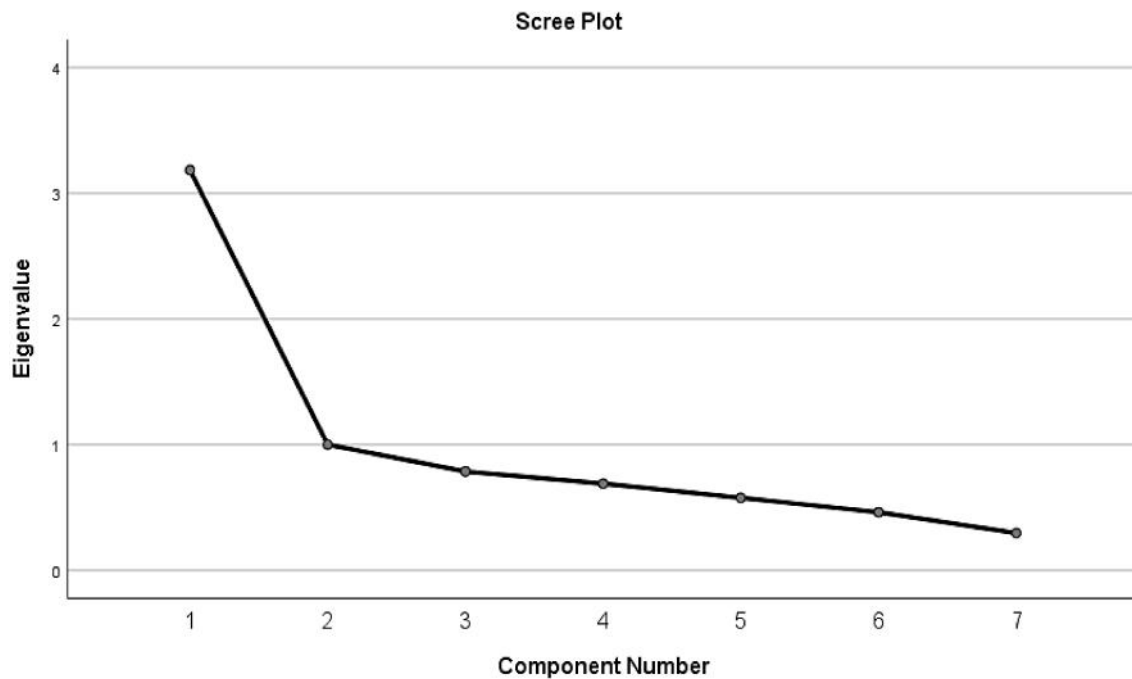
**Table 7: Rotated Component Matrix**

	Component	
	1	2
Internet Connectivity	.680	<b>.178</b>
Doubt Clearing	.528	.638
Communicating with Teacher	<b>.454</b>	.653
Assignment submission	<b>-.110</b>	.840
Attending Practical classes	<b>.315</b>	.590
Absence of Academic Environment	.720	<b>.305</b>
In- Disciplined Participants	.770	<b>.027</b>

Fig. 11 depicts that our analysis had been well supplemented by the Scree Plot which is a graph of the Eigen values against all the factors. The graph was

constructed to understand the number of factors to be retained. The graph points out that only two factors had been extracted with Eigen values greater than 1

**Fig.11 Source: SPSS, Scree plot**



**Recommendations**

a) Since 70.4% of the students have not attended online classes before the lockdown proper arrangements must be made so that they can access their education without any hindrance. This is easy to write and say but difficult to implement. The educational institutes must arrange training programmes both for the teachers and students in order to acquaint themselves with the changed face of education

b) Since in rural India there is problem relating to internet accessibility and even parents are not literate enough to understand the learning requirements of their kids, Government and other NGOs must develop an environment so that online education does not hamper upcoming generations. In rural India there are innumerable first generation learners. Here television and radio can play a pivotal role as it is easy to access. It can be used as a medium to reach mass

students who can't afford to have an internet. Television and radio supporting education and a good number of channels entirely dedicating on education can provide education in rural India at a massive scale.

c) 68.9% students did not prefer online classes. This is the most important area to ponder and strategy developers or administrators must initiate plans and programs that will increase the preferability of online classes. In India especially in Kolkata students are hesitant to take up online classes and 72.3% of the students agreed to have education combining both online platform and face to face interaction. So education institute must devise strategies like having combination of both online and offline classes.

d) 25.2% students responded that they did not get suitable help from their educational institute or the teachers for learning things staying at home. This is a reason to worry even though the percentage is small.

e) 80.1% of the students are not feeling safe to go back to their institutes after the lockdown. Students are traumatised; they are seeing or hearing news about the virus which is bringing down their morale, they are becoming disinterested to study. Mental condition and mental health should be the priority for the strategy developers. Institutes must try to come up with plans which will bring back the confidence among students and also parents will be happy to send their kids to the institutes.

f) 43.2% of the students who got online education amidst lockdown are not happy about the procedure. The new academic session must come up with curriculum which will encourage the students to accept the changes by adapting to it quickly.

g) Parents must take good care about how their kids are handling the smart phones or accessing the internet or different gadgets while availing education through digital platform.

h) Teachers of different institutions must acquaint themselves with the application that will be used for their teaching in order to have minimum technological barrier while they are taking online classes.

i) Teachers should also develop robust PowerPoint presentations, efficient e-content and interactive teaching kits to be used in order to attract and engage their students. For Higher education Institution Assignment must be regularly given to students so that they keep on engaging themselves into brainstorming educational activities. Debates and online quizzes along with webinars are to be arranged for students. Institutes must also arrange for Faculty Development Programs or Skill Development Programs for the teachers to enhance and upgrade their skills about using online platforms. Teachers must also develop unbiased system of evaluation.

j) Teachers must vouch upon clearing of doubts regularly as the study revealed that students will face problem about clearing their doubt. Unstable internet connectivity

is another issue which is required to be solved by the regulators of an institute.

k) There are various precautionary measures that should be implemented in educational institutes. Some of the important measures as stated by the respondents are as follows:-

- Checking body temperatures, wearing mask and gloves Sanitization of clothes, shoes, purse or wallet and rings or ornaments while entering institution. Proper health Care facility for all workers and staffs
- Not more than 20 students in one class depending on the availability of rooms and strength of students
- Only doubt clearing classes may be conducted offline with prior appointment with specified number of students.
- Except Practical classes usual classes can be taken online. Students of a particular class can be divided in 3-4 groups for practical classes and 1 or 2 groups at a time can come to attend the practical class. For exams we have to set the routine in such a way that in a single day of examination we could accommodate them in school maintaining sufficient distance.
- Educational institutions should arrange alternative day classes for students
- Proper hygiene level must be maintained for distributing mid-day meals

### Conclusions

Sundar Pichai, CEO Google, in his speech addressing it to be #DearClassof2020 raised the hope of the graduating class of

2020. In his speech he took examples of students who succeed and prevailed amidst deadly pandemic of 1920, Vietnam War and 9/11 attacks. It is important to remain hopeful. New technology will frustrate, changes will frustrate but generation will adapt to this for a better world and a better tomorrow. As far as teachers are concerned in the newer version of teaching they must take the challenge of addressing the emotional contact with their students. In a face to face class a teacher can understand requirement of a student, teacher can address students' need from his or her body gestures and facial expression inside a classroom. These things will not be there in online teaching. So a good teacher must focus on the following:-

- Blended learning
- Doubt clearing on a continuous basis
- Films and audio visual methods of teaching and robust e-content
- Unbiased and scientific evaluation of student

A research on "altruism" suggests that giving support can be even more beneficial than receiving it. We need to connect ourselves with rest of the world. This connection can come from any medium based on its availability. It can be a story book; it can be calling others and asking for their well being, it can be listening to music as Italians have presently done to get away from the boredom of lockdown state and raised their spirits up. Italians are singing and playing music through open windows. We can focus on things that we love to

do and which we cannot do during our busy hours. We can take up that task which we had postponed earlier and which can be done sitting back at home quite easily. We can plan for our retired phase of life. We can check out different investment plans (although the market is having some stomach ache presently). Thinking about future in a proactive way can make us happy. We can call up the person with whom we had messed up at certain times of our lives. We can tell sorry to one another. This can create a feeling of cohesiveness and togetherness. Practising freehand exercises and yoga are always the best options whatever may be the reason. We can engage ourselves into some creative things like painting, colouring and even writing something. We must always remember the only thing that is constant is "Change".

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