Digital learning and the lopsidedness of the education in government and private primary schools during the COVID-19 pandemic in West Bengal, India

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Abstract
Since March 2020, all academic institutions have been closed due to the COVID-19 pandemic and have been encouraged online mode of education to the students in West Bengal, India. The most profound negative effect of the school closure has been noticed on primary education. This research examines how school closures in both government and private primary schools in West Bengal result in uneven teaching-learning opportunities in formal and non-formal education during the COVID-19 pandemic. The present study was conducted based on an online survey in West Bengal using a structured questionnaire. The Kolmogorov-Smirnov Test, Shapiro-Wilk Test, Pearson Chi-squared ($\chi^2$) test, and logistic regression were used to check the relationships among the variables. Based on 473 responses to an online survey administered to the parents and educated...
family members of 3–10 years aged children from both government and private primary schools in West Bengal. The authors’ analysis shows the teaching-learning opportunities varied significantly. Further, the study revealed a noticeable gap between government and private primary schools. The study depicts that students from urban areas have more accessibility to online education than those living in rural areas. The study revealed that 98.7% of private schools and 33.7% of students from government primary schools could access online education. Statistically significant differences were observed between both categories of schools in academic affairs during the pandemic.

**Keywords**
Pandemic, primary education, teaching-learning process, online class, West Bengal, India

**Introduction**
COVID-19 is caused by the SARS-CoV-2 virus, which spreads between people, mainly when an infected person is in close contact with infected people. Evidence suggests that the virus’s main way spreads respiratory droplets among people in close contact (WHO, 2020a). Initially, there were not many active cases of coronavirus in India. The first three active cases were confirmed in Kerala on the 30th of January and the 3rd of February when they returned from Wuhan, China. Two other cases were reported a month later, on March 3rd, one with a travel history from Italy and the other in Hyderabad visiting Dubai (Ghosh et al., 2020). On 11 March 2020, WHO declared a pandemic because the SARS-COV-2 caused COVID-19 (WHO, 2020b). India’s central and state governments are constantly working to reduce the number of active cases and their repercussions, and they are taking all necessary steps to address the issues (Ghosh et al., 2020).

To keep citizens safe from the pandemic, the Ministry of Health and Family Welfare (MoHFW) Government of India implemented several basic preventative measures. These include frequent hand washing, avoiding touching the mouth, nose, and eyes; seeking medical attention as soon as possible if someone has a fever and breathing issues; maintaining social/physical distance; increasing the test/day, etc. However, apart from these basic precautions, the Government of India’s multiple departments and organizations have undertaken various preventive measures. These measures were categorized five folds: preventative measures in an educational institute, social/physical distancing measures, preventive measures in the archaeological sites, steps in the transportation system, and measures in sports (Kumar, 2021).

The novel coronavirus, COVID-19, has become a worldwide threat to health, travel, commerce, and education (Bonal and González, 2020; Giwa et al., 2020; Islam et al., 2021; Mishra et al., 2020). UNESCO (2017) report highlighted that about 264 million children and adolescents are not in school worldwide, and this year’s COVID-19 Pandemic and lockdown extended and worsened this situation (Mishra et al., 2020). On 24 March 2020, the Government of India (GOI) declared a country-wide lockdown from midnight 25 March 2020, closing all educational institutions, gyms, swimming pools, libraries, and theatres. The CBSE board revised some guidelines for examination centers on 18 March 2020. On 16 March, the CBSE and JEE exams scheduled were postponed until 31 March 2020. The UPSC had also announced that their interview procedure would be postponed (Kumar, 2021). During COVID 19, admissions procedures and the evaluation system were disrupted. In place of traditional practices, some quick assessments have been used (Tilak, 2021).

The Government of India ordered four phases of lockdown: 25 March 2020 to 14 April 2020 (Phase 1: 21 days); 15 April 2020 to 3 May 2020 (Phase 2: 19 days), 4 May 2020 to 17 May 2020
From the partial to complete withdrawal of lockdown, more or less different organizations opened. School closures are based on proof and assumptions that an influenza-like, very contagious fever with shortness of breath and loss of taste or smell, a sore throat, and fatigue. Infections of SARS-nCOV may be reduced by maintaining physical contact between students and, therefore, breaking up the chain of transmission of the virus in academic institutions (Jackson et al., 2016). These measures are primarily based on the assumption that children contribute more to influenza transmission than adults due to low levels of immunity and high levels of transmission due to asymptomatic transmission in these young students (Wallinga et al., 2006). Therefore, these long-term school closures have badly affected teaching-learning and evaluation processes. This is a critical time for the education sector, especially at the primary and upper primary level, because most of the state governments in India started face-to-face classes in February 2021 for secondary and higher secondary sections. Still, there is no assurance when schools will re-open, especially in primary schools in West Bengal (17/09/2021).

The abrupt suspension of academic activities initially perplexed educators and students, unsure how to deal with the crisis. Due to the lockdown, the educational institutions suspended their classes, examinations, internships, and catering to the online mode of education. Teaching methods have changed from traditional to modern teaching-learning approaches, from classroom to zoom, personal to virtual, and seminars to webinars (Mishra et al., 2020). However, the pandemic has paved the path for technological advancement and other infrastructure conducive to online learning. Thus, it has taught us ways to deal with pandemics and has created many challenges and opportunities for software advancement (Jena, 2020). The lockdown provides them with hope for teachers and students to continue their educational activities online.

Besides several measures adopted for the continuing education system, UNESCO estimated that 0.32 billion students in India have suffered from school closures due to the COVID-19 Pandemic (UNESCO, 2020), resulting from limited or no access to electricity supply, smartphones, internet connectivity, and computers. The teachers assigned work to students via the internet and delivered lectures through live video conferencing using mobile-based applications such as Google meet, Zoom, Facebook, YouTube, Skype, etc. Many people, like teachers, guardians, and students, are connected to various e-mediums for effective communication through the Whatsapp group (Jena, 2020). Furthermore, the traditional classroom teaching-learning abruptly transformed into online classes delivered via digital platforms, government portals, Direct-to-Home (DTH) channels, and other means creating learning inequality and deprivation in children, as well as driving a large number of children out of school due to digital segregation (Kundu and Sonawane, 2020; Paik and Samuel, 2022).

However, almost all economically disadvantaged students in the villages struggle to keep pace with online education and suffer more significant negative consequences due to the prevalence of COVID-19 (Aucejo et al., 2020). Due to economic constraints and social stigma, many children do not follow their regular school schedule and experience the consequences of poor mental health (Pokhrel and Chhetri, 2021). The family income was dropped drastically due to job loss, mainly in the unorganized sectors, inadequate access to digital devices, and the high price of internet connectivity has disrupted students’ academic lives, primarily those who studied in government primary schools (Lee, 2020). Some private schools have adopted online teaching methods amid the lockdown. However, according to the various reports, the number of COVID-19 infected children comprises a smaller number than expected from their population. Although there is mixed evidence, the study suggests that children may be infected as adults but remain asymptomatic or have mild exposure to the disease (Shen et al., 2020).
It has been observed that schools in India were shut down first and resumed last, which significantly impeded admissions, teaching-learning, and assessments of students (Tilak, 2021). UNICEF (2021) estimated that about 247 million children were out of school due to one and half year closure of about 1.5 million schools. During the unlock periods after the first, second and third wave of catastrophe due to COVID-19, schools remained shut though many economic activities started. The government of India deployed various web-based platforms like e-worksheets, e-textbooks, e-assessments, e-Pathshala, e-Vidya (DIKSHA and NISHTHA), etc. Still, these were not fruitful for the pre-primary and primary government school students with diverse vernacular languages, as the programs mentioned above were delivered in Hindi and English. However, several web and app-based platforms such as Byju’s, Vedantu, Shaw Academy, Khan Academy Udemy, My Private Tutor, EduWizard, Vibrant Academy, Grade up, Great Learning, Toppr, Coursera, Whitehat Jr, etc. have emerged. But their access was limited to government school students as NSSO (2020) reported that only 4.4 and 14.9% of rural schools have computer and internet facilities, while it was 23.4 and 42.0% in urban areas, respectively. It is also reported that children above 5+ ages in rural areas have knowledge of ICT was 10.8% , and in urban areas, it was 33.8%. Again, in a Ministry of Education, Government of India (2021) report, it was revealed that 28.6 and 11.6% of government schools have computer and internet facilities in India, while 61.8 and 42.2% of private schools have the same. In a report of the School Team (2021), it has been observed that percentages of school children who attended online classes in India were 8 and 24% in rural and urban areas, respectively. 65 and 57% of rural and urban school students who attended online classes faced internet connectivity problems. Thus, there was a clear digital divide between government and private schools in India. A reversal trend reported by India today on 8 August 2021, due to the loss of the job of parents during the COVID-19 pandemic, about 1.1 million primary students (2.82 lakh children in Gujarat, 2.4 lakh in Haryana, 1.85 lakh in Punjab, 1.29 lakh in Madhya Pradesh, and 1.25 lakh in Telangana) students were shifted from private primary schools to government schools in 2021–22 (Tilak, 2021).

The Union Ministry of Home Affairs (MHA), India, proclaimed a phase-wise unlock from 8 June 2020. The lockdown norms were relaxed to allow the opening of shopping malls, restaurants, religious places, metro rail, cinema halls, gymnasiums, swimming pools, entertainment parks, theatres, bars, auditoriums, assembly halls, and similar places, social/political/sports/entertainment/cultural/religious functions, and other large congregations, but only educational institutions remain closed, especially primary sections in West Bengal. Some states tried to re-open schools but were forced to close due to the coronavirus outbreak among students and teachers. Thus, primary education conditions worsen due to lockdown worldwide and in India. Hence, the present study seeks to see how inequalities in government primary schools and private primary schools’ teaching-learning processes exist under the COVID-19 Pandemic in West Bengal. Thus, the study finds the gap between the government’s primary schools and private primary schools’ teaching-learning status during the COVID-19 pandemic in West Bengal.

**Material and methods**

**Research design**

The present descriptive study was conducted to explore the digital learning and lopsidedness of education in government and private primary schools during the pandemic (COVID-19) in West Bengal, India. We follow the quantitative research approach. Data were collected through a Google Form-based online survey. For students whose ages lie between 3 years and 10 years, the
questionnaires were sent to their parents/guardians and educated family members who have smartphones with internet access. In the case of government primary schools, because most parents cannot use the said mode, questionnaires were distributed to educated family members of those students, and data were collected. In a nutshell, the present research applied to pre-primary and primary students of the age group of 3–10 years. During the online survey, 35 questions were set for the respondents to analyze the impact of lockdown on the teaching-learning status of pre-primary and primary education in West Bengal. The first set of questionnaires characterized the different socio-economic backgrounds of the respondent families. The second set of questionnaires was designed to analyze the mode of online teaching-learning processes. The third set of the questionnaire was framed to determine the gap between the government primary schools and private primary schools’ teaching-learning status during the COVID-19 Pandemic in West Bengal.

Sample size and method
The present study is performed online in West Bengal using a structured questionnaire. The survey was conducted from 1 March to 30 March 2021 to collect information about the educational status of primary and pre-primary students. The Simple Random Sampling (SRS) without repetition technique was used, and only parents from classes I-IV were considered. The questionnaire was prepared in Google form with a cover letter mentioning the purpose of the survey and ethical issues. The form has been restricted to multiple entries from an individual account. We sent the questionnaire to the educated parents/guardians who have either email or Whatsapp. The parents of private school students are mostly educated. In the case of government primary schools, because most parents cannot use the said mode, questionnaires were distributed to educated family members of those students, and data were gathered. Participants’ characteristics are shown to assess the learning status, mode of learning, and inequality between private and government school students. All the analyses were accomplished using the Statistical Package for Social Science (SPSS Version: 25).

Selection of factors
To know the lopsidedness of digital learning in education in government and private primary schools during the COVID-19 pandemic, it is crucial to include the most relevant factors in the study. Based on existing literature, we considered 10 factors in the present study and enlisted them in Table 1.

The samples were collected from 23 districts of West Bengal. This is an online survey-based study of 473 private and government primary schools students. Out of 473 respondents, 243 are from government primary schools and 230 private primary schools. Google forms were sent to a total of 500 people. Six respondents from government primary schools and 20 private schools parents did not answer. As a result, the overall rate of non-response is about 5.4%.

Methodology
We followed the Empirical Distribution Function (EDF) Tests like the Lilliefors (LF) Test and the Shapiro-Wilk Test to test the normality of data. The Kolmogorov-Smirnov test is used to test the normality of continuous variables.

It is essential to assess the normality of any data before drawing valid or reliable inferences. Dufour et al. (1998) stated that there are about 40 tests for assessing the normality of the data. The
Table 1. Selection of factors by studying the most relevant literature.

| Authors                  | Knowledge about online class | Mode of study | Study guidance during lockdown periods | Smart phone utilization during online class | Network issues during lock are sown periods | Online class and study materials | Time spend for study during lockdown | Home tuition/Private tuition | Online platform utilization | Activity task | Total |
|--------------------------|------------------------------|---------------|----------------------------------------|---------------------------------------------|--------------------------------------------|-----------------------------------|-------------------------------------|-------------------------------|-----------------------------|----------------|-------|
| Dong et al. (2020)       | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 5     |
| Egielewa (2021)          | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 4     |
| Gupta et al. (2021)      | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 9     |
| Islam et al. (2021)      | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 4     |
| Kapasia. et al. (2020)   | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 7     |
| Raj et al. (2020)        | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 4     |
| Sahu et al. (2021)       | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 4     |
| Singh (2021)             | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 4     |
| Suneja and Bagi (2021)   | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 7     |
| Zhao et al. (2020)       | 1                            | 1             | 1                                      | 1                                           | 1                                          | 1                                 | 1                                   | 1                             | 1                           | 1               | 6     |
| Total                    | 9                            | 5             | 4                                      | 8                                           | 5                                          | 3                                 | 5                                   | 3                             | 10                          | 2               | 54    |

Source: Literature Survey.
tests are divided into two categories, namely descriptive (for example, skewness and kurtosis coefficient) and theoretical methods (for example, the Shapiro-Wilk (SW) test, the Kolmogorov-Smirnov (KS) test, the Anderson-Darling (AD) test, and the Lilliefors (LF) test, etc.). The normality tests are based on discrepancies between the empirical and hypothesized distributions (supremum and square class). This is called the Empirical Distribution Function (EDF) Test (Dufour et al., 1998). We followed the Shapiro-Wilk (SW) and Kolmogorov-Smirnov (KS) tests among the various EDF tests to check the distribution’s normality.

**Kolmogorov-Smirnov test**

The Kolmogorov–Smirnov (K-S test or KS test) statistic belongs to the supremum class of Empirical Distribution Function (EDF) statistics, and this class of statistics is based on the largest vertical difference between the hypothesized empirical distributions (Conover, 1999). Given an ordered set of ‘n’ data points, \(x_1 < x_2 < \ldots < x_n\), Conover (1999) defined the test statistics proposed by Kolmogorov (1933) as in [equation (1)]

\[
T = \sup_x |F^*(x) - F_n(x)|
\]

where ‘sup’ stands for supremum, which means the greatest. \(F^*(x)\) is the hypothesized distribution function, whereas \(F_n(x)\) is the EDF estimated based on the random sample. In the KS test of normality, \(F(x)\) is taken to be a normal distribution with a known mean, \(\mu\), and standard deviation, \(\sigma\).

The KS test statistic is meant for testing,

\(H_0: F(x) = F^*(x)\) for all \(x\) from - \(\infty\) to \(\infty\) (The data follow a specified distribution)

\(H_a: F(x) \neq F^*(x)\) for at least one value of \(x\) (The data do not follow the specified distribution)

**Shapiro-Wilk Test**

The Shapiro-Wilk test detects the departures from normality due to skewness, kurtosis, or both (Althouse et al., 1998). Given an ordered random sample, \(y_1 < y_2 < \ldots < y_n\), the original Shapiro-Wilk test statistic (Shapiro, 1965) is defined as in [equation (2)]

\[
W = \left[ \frac{\sum_{i=1}^{n} a_i x(i)^2}{\sum_{i=1}^{n} (x_i - \bar{x})^2} \right]
\]

where \(x(i)\) is the \(i^{th}\) order in the statistics, \(\bar{x} = \) sample mean (\(x_1 + \ldots + x_n\))/\(n\), Coefficient \(a_i\) is given by, \(a_i = (a_1, \ldots, a_n) = m^T V^{-1}/(m^T V^{-1} V^{-1} m)^{1/2}\) and \(m = (m_1, \ldots, m_n)^T\).

Shapiro-Wilk Test is used to find the expected values of independent and identically distributed random variables sampled from the standard normal distribution. \(V\) is the covariance matrix table of the order statistics.

The Value of \(W\) lies between zero and one. Small values of \(W\) lead to normality rejection, whereas a value of one indicates the normality of the data.

Since the \(p\)-value is \(= 0.0001\), which is smaller than \(\alpha = 0.05\), we reject the null hypothesis and conclude that the variables do not come from a normally distributed population. (Table 2).
Pearson’s Chi-squared ($\chi^2$) test

Pearson’s Chi-squared ($\chi^2$) test is a statistical test to determine how probable any observed difference between two sets of categorical data is due to chance (Pearson, 1900). It is a non-parametric test.

The value of the test statistic is written as in [equation (3)]

$$\chi^2 = \sum_{i=1}^{n} \left( \frac{O_i - E_i}{E_i} \right)$$

where, $\chi^2$ is Pearson’s cumulative test statistic, $O_i$ is the number of observations of $i$, $E_i$ is the expected (theoretical) count of $i$, $N$ is the number of cells in the matrix table.

When evaluating the Chi-squared ($\chi^2$) statistic, the $p$-value is compared to the predetermined significance level ($\alpha$) at specific degrees of freedom (d.f). Alternatively, the test statistic will be compared with the calculated value to the critical or tabulated value at a predetermined significance level ($\alpha$) at specific degrees of freedom (d.f). The significance level generally ranges from 90% to 99.9%. For the single distribution of the Chi-squared ($\chi^2$) Test, the df is $(k-1)$, and for the matrix table, it is $(r-1)$ $(c-1)$ where $k =$ no of observations; $r =$ number of rows, and $c =$ number of columns.

In normal English, ‘significant’ means important, while in statistics, ‘significant’ means ‘probably true’ (not due to chance). This is a precise statement of the degree of differences. The significance level shows how likely the result is to occur by random chance. The most common confidence level is 0.95, indicating that the findings have a 95% chance of being proved or a 5% chance of not being proven. In other words, if someone repeats his survey over and over 95% of the time, they would get the same results. This may be 0.1, 0.05, 0.001 etc. Hence, 0.001, 0.05, 0.1 is called significance level or 99%, 95% and 90% confidence level. The level of significance is symbolized by the Greek letter $\alpha$. When deciding on rejection or acceptance of Null hypotheses (Ho), the level of significance ($\alpha$) has been considered.

Degree of freedom refers to values that are free to vary after a restriction has been imposed on the dataset. For instance, if we have four numbers with the restriction that their sums must be 100, 3 numbers can be anything below 100, but the fourth number is restricted. For example, the first three numbers could be 25, 30, and 35, adding up to 90; then, the fourth number must be 10, so the sum would be 100. Thus, the degree of freedom of this case is (n-1), i.e. 3. The ‘df’ for different tests is different. When deciding on rejection or acceptance of the Null hypothesis (Ho), the level of significance ($\alpha$) has been considered.

Further, in Statistics, ‘the test of significance’ is the method of concluding to reject or support the hypothesis based on sample data. The determination of the $p$-value is essential for any test statistic obtained from the sample under the null hypothesis (Ho). A general rule is that if the ‘$p$’-value is $\leq \alpha$, we reject the null hypothesis (Ho).

### Table 2. Normality test of the variables.

| Tests of normality | Kolmogorov-Smirnov | Shapiro-Wilk |
|--------------------|--------------------|--------------|
|                    | Statistic | d.f | Sig | Statistic | d.f | Sig |
| Type of school a. Lilliefors significance correction | 0.348 | 473 | 0.0001 | 0.636 | 473 | 0.0001 |
The $p$-value of Pearson’s Chi-squared ($\chi^2$) Test differs for the lower-tailed, upper-tailed, and two-sided tests.

The $p$-value [equation (4)] for

i) Lower-tailed test $\quad = P(TS \leq |ts| \mid H_0 \text{ is true}) = \text{cdf}(ts)$

ii) Upper-tailed test $\quad = P(TS \geq |ts| \mid H_0 \text{ is true}) = 1-\text{cdf}(ts)$

iii) Two-sided test $\quad = 2*P(TS \leq |ts| \mid H_0 \text{ is true}) \text{ if } ts \text{ is negative or} \quad = 2*[1-\text{cdf}(|ts|)] \text{ if } ts \text{ is positive}$

where, $P$ is the probability of an event. $TS$ is the test statistic. $ts$ is the observed value of the test statistic calculated from the sample ($\text{cdf}$) is the cumulative distribution function of any distribution of the test statistic (TS) under the null hypothesis.

**Logistic regression**

Logistic regression (logit) is one of the best models to estimate the probability of a binary event in the distribution. It is widely used to predict the categorical dependent variable within a pre-defined set of independent variables. Our study’s dependent variables are categorical, and independent variables are categorical, ordinal, or scale data. Therefore, the binary logistic regression model has been used to analyze access to online education accessibility. The model is explained as [equation (5)]

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_k X_{ik} + \epsilon_i$$

where, $Y_i =$ Dependent Variables; $\beta_0 =$ Constant; $\beta_1$ Coefficient of variables $X_{i1}$; $X_i =$ Independent Variables and $\epsilon_i =$ Error Term. Where $p$-value can derive as [equation (4)]:

The regression coefficient and odds ratio are used to analyze the probability of online education accessibility. The odd ratio denotes the probability of the event occurring and non-occurring, explained as [equation (6)]

$$\text{log} \frac{P_i}{1-P_i} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_k X_k + \ldots \epsilon$$

where $P_i =$ Probability of the event occurring/not occurring; $\beta_0 =$ Constant represents the value of $\text{log} \frac{P_i}{1-P_i}$ with all the values of $X_i$ to $X_k$ in the model; $X_i$ to $X_k =$ Independent variables related to the size samples; $\epsilon =$ error term.

The logistic regression model has been applied to analyze the socio-economic and communication factors affecting access to online education in pre-primary and primary education in West Bengal. Different independent variables like parents’ education, income level, occupation status, sex, living area of the students, network difficulties, and knowledge about online education have been considered. Access to online education of the students is coded in a binary form: the dependent variable is given the value "1" if students can access online education and "0" if not.

**Result**

It observed that the total number of pre-primary and primary students in West Bengal was 96,07,181 (DISE, 2021). Among them, the total number of students in the state government primary schools (Department of Education, Government Aided, Madrasah Board, and other government-managed
The total number of students in a private primary school was 1,910,948 (19.89%). The number of students under the control of the Local Body, Tribal Welfare Society, and Social Welfare Society is 98,936 (1.03%). The total number of students in central government primary schools (Kendriya Vidyalaya, Labour Ministry School, Railway School, and Sainik School) is 23,433 (0.24%). Our present study has considered only state government and private primary schools as about 99% of West Bengal is enrolled in these institutions.

**General characteristics of the respondents (parents and family members)**

General household characteristics of parents and students are analyzed in Table 3. The number of male and female students in the sample was 257 and 216, respectively. Among them, 52 and 57% of male students enrolled in government and private primary schools, respectively, while female enrollment in government and private primary schools was 48 and 43%. The study found that a more significant proportion of parents of government school children have lower levels of education. A large proportion of them have only primary (31.7%) education, and 16.5% are still illiterate. However, most parents of private primary schools have postgraduate (42.3%) and undergraduate (33%) degrees. Those parents who have higher education are most likely to admit their children to private schools. Among the parents of government primary school children, only 2.9% work in the government sector, while a large proportion of them are involved in agriculture (33.3%) and daily wage labour (35%). Many private school parents are engaged in the government sector (53%) and business (31.7%). In government primary schools, 29.6% of parents’ income is below Rs.5000 per month, while 84.7% have Rs. 5000- Rs.10,000 monthly incomes. On the other hand, about 93.4% of parents have above Rs.15,000 monthly in private primary school. It has been observed that 72% of government schools are located in rural areas, while 21.4% are in urban areas. Private schools are concentrated in urban areas (62.6%), semi-urban areas (14.3%), and rural areas (23.3%). The study reveals that most private schools are located in urban areas, and most government schools are located in rural areas.

Pearson’s Chi-squared ($\chi^2$) Test has been applied for showing the significance of the test of the parameters used in Table 3. It has been observed that, except for gender, all other parameters are statistically significant at 5% level of significance ($\alpha$) with their respective degrees of freedom (df). A general rule is that if the $p$-value is $\leq \alpha$, we reject the Ho, i.e. null hypothesis. Except for gender, we rejected the Ho and accepted the H1 as the $p$-value is less than the selected $\alpha$ (0.05) value. Thus, it indicates the variations in all the categories of all the parameters except for gender. As the $p$-value of gender is more than 0.05, i.e. 0.265, we accept the Ho, i.e. the test is statistically not significant, and concluded that there are no significant differences among male and female students.

**Accessibility of smartphones for the teaching-learning process**

The smartphone played a vital role in online learning when all educational institutions were closed during the pandemic. One-third of students in government schools can access a smartphone, while 98.7% of students in private schools do. A significant difference has been observed between private and government school parents’ affordability of smartphones (Table 4). Many (84.7%) government primary school parents earn less than Rs. 15,000 per month, and 92.7% have no higher education. It is almost impossible to conduct online classes in government primary schools due to a lack of smartphones. The study found that online education in private primary schools is going smoothly. The learning gap between government and private primary education systems has widened over the
past 18 months. Pearson’s Chi-squared ($\chi^2$) Test has been applied for showing the significance of the test of the parameters used in Table 4. It has been observed that the use of smartphones for online classes in government and private primary schools is statistically significant at 5% level of significance ($\alpha$) with 1 degrees of freedom (df). As $p < \alpha$, we reject the null hypothesis (Ho) and accept
the alternate hypothesis (H1). Thus, it is established that there was a significant variation in the use of smartphones for online classes among the students of government and private primary schools.

**Study management during the pandemic**

Several questions were asked to the parents and guardians to trace the learning status during the lockdown, such as learning modes, syllabus coverage, time spent for study, and study management. During the COVID-19 pandemic, all private schools arranged the online mode of teaching. Table 5 shows that half of the private school students accessed online education through their institutional cooperation. Half of the private school students accessed online education through their institution, followed by Online arrangement by self/institution/teacher (28.5%) and Book and online both (14%) arrangements. Many government school students arranged their studies by textbook for reading only (67.7%), and 17.5% of students did not have any learning process during this period. Government primary schools’ teaching-learning processes were almost closed due to the lack of online infrastructure for the students’ families (smartphones, mobile data, poor networks, etc.). Only a few students studied their self-initiative.

Pearson’s Chi-squared (χ²) Test has been applied for showing the significance of the test of the parameters used in Table 5. It has been observed that the method of studies in government and private primary schools are statistically significant at 5% level of significance (α) with 19 degrees of freedom (df). As \( p < \alpha \), we reject the null hypothesis (Ho) and accept the alternate hypothesis (H1). Thus, it is established that there were significant variations in the method of studies and study management among the students of government and private primary schools.

**Study guidance during the pandemic**

Study guidance during the pandemic is shown in Table 6. In government primary school, about 30% of parents help their children directly to study, followed by a private tutor (30%) and own arrangement (17.9%). The family members guided their children (8.40%), and some parents reported that children manage their studies in both ways and different ways. In private school students, 55.10% of parents teach their children actively, and 26.6% of students are guided combined by parents and private tutor followed by a private tutor (9.2%). As the \( p \)-value of the Chi-squared (χ²) test is < 0.001 at 5% level of significance with 1 d.f., the null hypothesis has been rejected. Thus, it is established that there was a significant variation in the study guidance during the pandemic among the students of government and private primary schools.

### Table 4. Accessibility of smartphones for the teaching-learning process.

| Type of school | Smart phone for online classes | Pearson’s Chi-squared (χ²) test |
|---------------|-------------------------------|--------------------------------|
|               | Yes (%)                       | No (%)                         | p       | d.f.  |
| Government    | 82 (33.7)                     | 161 (66.3)                     | <0.001* | 1     |
| Private       | 227 (98.7)                    | 3 (1.3)                        |         |       |
| Total         | 309 (65.3)                    | 164 (34.7)                     |         |       |

Source: Online Survey, 2021 and Compiled by the Researchers (Value in the parenthesis shown in %).

*Significant at 0.05% level of significance with d.f. 1.
The status of private tuition is shown in Table 7. Among the respondents, 44.20% of government school students did not take any private tuition, and they were entirely dependent on the school. About 18.6% of government school students who had taken tuition stopped their tuition to date, and 20.7% of respondents of government schools reported that their wards’ tuition had been stopped during April-May 2020. It is further observed that only 7.9% of the respondent continues their tuition during COVID-19. Whereas 40.40% of private school students did not take any private tuition, 11.80% of students stopped their tuition up to date, and only 3.9% of students continued their tuition during the lockdown. Pearson’s Chi-squared (χ2) Test has been applied for showing the significance of the test of the parameters used in Table 7. It has been observed that the status of private tuition in government and private primary schools is statistically significant at 5% level of significance (α) with 1 degrees of freedom (df). As p < α, we reject the null hypothesis (Ho) and accept the alternate hypothesis (H1). Thus, it is established that there was a significant variation in the status of private tuition among the students of government and private primary schools. Further from Table 7, it is clear that government primary school students are more dependent on tuition than private schools.

**Knowledge about the online class of parents**

Among the respondents, 76.8% of government school parents did not know about the online teaching method, while 84.6% of private school parents knew about the online class. Only 2.1% of government school parents know about various online teaching applications, whereas 23.3% of private school parents know about multiple online teaching applications. Further, 15.3 and 31.3% of respondents reported that both government and private school parents have a little bit of knowledge about the online platform. The rest of the respondents reported that they have little idea about online classes and various applications; the details are presented in Table 8. This situation, directly and indirectly, affects online learning processes among children. Pearson’s Chi-squared (χ2) Test has

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**Table 5. Study management during the pandemic.**

| Method of study                          | Government | Private |
|------------------------------------------|------------|---------|
| Online arrangement by institution        | 2.1 %      | 49.6 %  |
| Online arrangement by self/institution/teacher | 1.1        | 28.5 %  |
| Online self-study                        | 1.1        | 1.8     |
| Book and online both                     | 3.7        | 14.0    |
| Online group study                       | 0.0        | 0.4     |
| Text book only                           | 67.7       | 2.6     |
| No study                                 | 17.5       | 0.0     |
| Others                                   | 0.0        | 0.4     |
| Others/Different method                  | 6.9        | 2.6     |

Source: Online Survey, 2021 and Compiled by the Researchers.

*Significant at 0.05% level of significance with d.f. 19.
been applied for showing the significance of the test of the parameters used in Table 8. It has been observed that the knowledge about online classes in government and private primary schools is statistically significant at 5% level of significance ($\alpha$) with 1 degrees of freedom (df). As $p < \alpha$, we reject the null hypothesis (Ho) and accept the alternate hypothesis (H1). Thus, it is established that there was a significant variation in the knowledge about online classes among the students of government and private schools.

**Online class and study materials**

Table 9 shows the status of the online class and study materials. Private primary schools are being taught online in the pandemic situation, whereas the government primary school teaching-learning process is suspended in most cases. It has been reported that 83.8% of government school students were not given any online classes or study materials, whereas 72.5% of private school students received study materials weekly. Only 8.7% of private school students did not received study materials in proper time. About 8.7% of private school students get their study materials monthly, and 10.1% of students reported that they sometimes get study materials. About 5.8, 7.5, and 2.9% of students of government schools were provided online classes and study materials occasionally, weekly, and monthly. Pearson’s Chi-squared ($\chi^2$) Test has been applied for showing the significance of the test of the parameters used in Table 9. It has been observed that the online class and study materials during the pandemic in government and private primary schools are statistically significant at 5% level of significance ($\alpha$) with 1 degrees of freedom (df). As $p < \alpha$, we reject the null hypothesis (Ho) and accept the alternate hypothesis (H1). Thus, it is evidenced that there was a significant variation in the online class and study materials during the pandemic among the students of government and private schools.

**Activity tasks given to students during the pandemic**

The Government school provided an activity task during June 2020. A more significant proportion of government school students (67.5%) received their activity task from their school, and 53.5% of students submitted their activity task only on time. While 92.9% of private school students received their activity task, 86.2% submitted their activity task within a stipulated time (Table 10).
Table 7. Status of private tuition among the students.

| Type of school | Status of private tuition | Pearson’s Chi-squared ($\chi^2$) test |
|----------------|---------------------------|-------------------------------------|
|                | Closed till now (18.6%)   | Not closed (7.9%)                   | 242 (100) |
| Government     | Closed on April (8.7%)    | Closed on April-May (20.7%)         | 107 (44.2) |
|                |                            | No private tuition taken (40.4%)    | 92 (40.4) |
| Private        | 45 (18.6)                  | 19 (7.9)                            | 228 (100) |
|                | 21 (8.7)                   | 50 (20.7)                           | 242 (100) |
|                | 16 (7.0)                   | 84 (36.8)                           | 107 (44.2) |
|                |                            | 92 (40.4)                           | 228 (100) |

Source: Online Survey, 2021 and Compiled by the Researchers. (Value in the parenthesis shown in %).
*Significant at 0.05% level of significance with d.f. 1.

As $p < \alpha$ of Pearson’s Chi-squared ($\chi^2$) Test at 5% level of significance ($\alpha$) with 1 degree of freedom (d.f), we reject the null hypothesis (Ho) and accept the alternate hypothesis (H1). Thus, it is evidenced that there was a significant variation in the activity task among the students of government and private primary schools.

Study time of students during the pandemic

Time spent on study during pandemic situations has been observed. In the case of government schools, 15.6% of children studied for less than an hour, followed by students for one to 2 hours (31.6%), two to 3 hours (23.5%), and more than 3 hours (11.5%) in a day. The most alarming thing is that 17.7% of children did not study at all (Table 11). For private schools, the result was different. No student was out of the study during the lockdown. The study found that less than one percent of private school students spent their study less than an hour. In contrast, a large proportion of them spent more time on their study for one to 2 hours (24.5%) followed by two to 3 hours (41%) and more than 3 hours (33.6%) respectively. As the $p$-value is $< \alpha$ of Pearson’s Chi-squared ($\chi^2$) Test at 5% level of significance ($\alpha$) with 1 degree of freedom (d.f), we reject the null hypothesis (Ho) and accept the alternate hypothesis (H1). Thus, it is evidenced that there was a significant variation in students’ study time during the pandemic among the students of government and private primary schools.

Determinants of access to online education

The analysis of logistic regression has been presented in Table 12. In developing countries like India, access to online education is difficult during the COVID 19 lockdown period, especially in remote rural areas (Muthuprasad et al., 2021). Various socio-economic and communication factors, such as parents’ education, income level, occupation status, sex, students’ living area, network difficulties, and knowledge about online education, directly and indirectly influence online pre-primary and primary education. As $p < \alpha$ of Pearson’s Chi-squared ($\chi^2$) Test at 1% level of significance ($\alpha$) with 1 degree of freedom (d.f), we reject the null hypothesis (Ho), and it indicates that the model is significant. Further, it is evidenced that the variables explained 93% of the variation in the model.
Table 8. Knowledge about the online class of parents.

| Type of school | Knowledge about various app | Knowledge about various website | A little bit of knowledge about the online platform | Knowledge about various apps, websites, online platform | Knowledge about the various app and online platform | Knowledge about various apps and website | A little bit of knowledge about online platforms, do not know | A little bit of knowledge about online platforms and website | Knowledge about the various app and do not know | Pearson’s Chi-squared (χ²) test p | d.f. |
|----------------|-----------------------------|-------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----|
| Government     | 4 (2.1)                     | 3 (1.6)                       | 29 (15.3)                                     | 146 (76.8)                                    | 2 (1.1)                                      | 1 (0.5)                                      | 3 (1.3)                                      | 0 (0)                                      | 1.5 (0.5)                                     | 1 (0.5)                                      | 0.014 1 |
| Private        | 53 (23.3)                    | 11 (4.8)                      | 71 (31.3)                                     | 35 (15.4)                                     | 4 (1.8)                                      | 20 (8.8)                                     | 27 (11.9)                                    | 2 (0.9)                                     | 3 (1.3)                                      | 1 (0.4)                                      |     |

Source: Online Survey, 2021 and Compiled by the Researchers. (Value in the parenthesis shown in %).
*Significant at 0.05% level of significance with d.f. 1.
The model reveals that parents’ education and income level, living area of the students, and network difficulties have a statistically significant relationship with online education access among the government’s primary schools and private primary school’s teaching-learning process COVID-19 Pandemic in West Bengal. At the education level, graduate or above is considered a reference category. According to the odds ratio, children of illiterate parents have a 98% lower chance of accessing online education than those with a higher level of education (graduate or above). Similarly, the result also depicts an increasing the higher level of parents’ education, and the probability of accessing children’s online education increases. Further, the study stated that children of more educated parents have higher accessibility to the online teaching-learning process during the COVID-19 pandemic. The income level of parents equally affects the online teaching-learning processes. The study reveals that children at lower-income levels have a lower probability of accessing online education than those at higher income levels. It indicates that children of more highly educated parents with high incomes have a higher opportunity to participate in the online teaching-learning process.

Students’ living area (location) also affects the online teaching-learning process. The study depicts that students who belong to urban areas have more accessibility to online education than those living in rural areas. In west Bengal, remote rural areas have not been connected to high-speed internet. Poor network connection, lack of digital devices for poor parents, and remote location are big challenges in conducting a smooth online teaching-learning process in West Bengal and India. The COVID-19 pandemic and the long lockdown period in India have had an enormous effect on the pre-primary and primary teaching-learning processes. Educational institutes and parents try to cope with new teaching-learning processes without early planning and guidance (Bonal and González, 2020). Thus, in India, private schools have better infrastructure to cope with the new online teaching-learning process than government schools (Table 12).

**Table 9.** Online class and study materials during the pandemic.

| Type of school | No study materials or online class provided by the institution | Monthly provided | Occasionally provided | Weekly provided | Pearson’s Chi-squared (χ²) test |
|---------------|-------------------------------------------------------------|------------------|----------------------|----------------|-------------------------------|
| Government    | 202 (83.8)                                                  | 7 (2.9)          | 18 (7.5)             | 14 (5.8)       | 0.001                         |
| Private       | 6 (8.7)                                                     | 6 (8.7)          | 7 (10.1)             | 50 (72.5)      |                               |

Source: Online Survey, 2021 and Compiled by the Researchers. (Value in the parenthesis shown in %).
*Significant at 0.05% level of significance with d.f. 1.

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**Discussion**

The Novel Corona Virus (SARS-Cov-2) infection was first observed in China, followed by a worldwide lockdown on 23 January 2020. Its effect was particularly alarming in India. India started a lockdown on 24 March 2020. In February 2021, people’s daily lives were restored to normal, yet the primary and upper primary schools and colleges remained closed. Considering the students’ interests, private schools have been taking online classes since April 2020. However, the nominal initiative was undertaken by the government school in West Bengal. Apart from the awful days of COVID 19, government schools have several advantages over private schools on normal days. For
example, teachers in government schools are more experienced and trained (Goyal and Pandey, 2009). Furthermore, free education is provided in government primary schools, and also the cost of higher education is affordable in a government institute. Free books, uniforms, scholarships, and Mid-Day-Meals are also provided in government schools (particularly in the primary sector) (Sedwal and Kamat, 2008). Moreover, the curriculum of government schools is designed so that the all-around development of students is enhanced. However, during the COVID-19 pandemic, the most significant benefit was that students of government primary schools received nutritious food every month for each student’s family. It is also worth noting that this food tremendously helped the needy students’ families. This facility (nutritious food) was not provided to private school students. Along with nutritious food, an activity task for each subject was given to each student of government primary school to continue their studies.

Our main findings express a significant difference between government primary school and private primary school education during the COVID-19 Pandemic in West Bengal. However, a notable finding is that only 2.1% of government primary school students received online classes from their teachers by individual effort. On the contrary, private schools have achieved maximum attendance in online classes through various electronic media. Therefore, the absence of teaching-learning activity in government primary schools for over 18 months has created a disparity in learning between the government and private school students. Students face difficulties in online studies due to poor internet connectivity (32.4%) in remote areas. Some studies suggest that it is almost impossible to create an online learning environment for economically weaker parents (Kapasia et al., 2020).

From the survey, it has been observed that about 17.7% of primary students from government schools were detached from the teaching-learning process for 18 months, and 15.6% of the students had studied more than 1 hour daily, whereas 33.6% of students from private schools studied for more than 3 h daily, and 41% of students studied for more than 2 h. This is an enormous disparity that arises during the COVID-19 pandemic situation. As a result of the digital divide, inequality in education is enhanced (DiMaggio and Hargittai, 2001). A recent report conducted by Nobel Laureate Amartya Sen’s Pratichi (India) Trust highlights that around 40% of primary school students in 21 state-run primary schools in Kolkata could not attend online lessons during the COVID-19 pandemic because of the digital gap. The report also found that the dependency of primary school students on their parents is enhanced their learning process. As most children are first-generation learners, their parents could not support them in their studies. It has affected the learning process for primary school students and led to the forced dropout of school for many

| Type of school | Activity task provided by the institution | Task returned by the students | Pearson’s Chi-squared ($\chi^2$) test | p | d.f |
|---------------|------------------------------------------|-----------------------------|----------------------------------|---|----|
| Government    | 163 (67.5)                               | 129 (53.5)                  | 0.001*                           |   |    |
| Private       | 212 (93.2)                               | 196 (86.2)                  |                                  |   |    |

*Significant at 0.05% level of significance with d.f. 1.
children. The report stated two components that create the digital divide: affordability and accessibility of uninterrupted data (The Hindu, 2021).

The disparities between private and government primary schools after the COVID-19 pandemic are observed in the present study. Half of the primary school students in private schools participated in full-featured online classes, and 42.5% used self-created resources, textbooks, and online guidance from private school teachers. On the other hand, government primary schools did not perform any teaching-learning activities. According to the Government of West Bengal’s mandate in the academic session 2020-21, all primary students will be promoted to higher classes. Among the respondents, 61.1% strongly agreed with the government’s proposal, and 16.7% expressed their acceptance. This decision affected the students out of the book or normal education. In comparison, 8.3% of respondents refrained from any comment, and 13.9% of the respondents expressed their disagreement. This increasing disparity in the acquisition of knowledge and learning outcomes has been deteriorating day by day due to a lack of proper guidelines and vision from the government side.

Among government school respondents, 66.3% could not afford a smartphone, and only 33.7% owned one. On the other hand, 98.7% of private school parents own a smartphone. The inadequacy of smartphones and internet connectivity is also an important issue for online education. Similar studies have been found in different regions. There is a financial inequality between government and private institution students in Bangladesh, implying digital device ownership (Zhou et al., 2011). Technical problems are a big challenge in online studies. Because of the lack of education, the use of digital equipment has not improved, so it is challenging to move the online education system forward. Three-fourths of the parents of government primary schools are ignorant about online classes, and 15.3% of the parents have a basic idea about courses conducted in an online mode. According to Ramasamy and Sundarraj (2020), 80.5% of parents prefer face-to-face classes than online classes.

Moreover, it is noted that the students enrolled in private schools are from families with a steady financial input and are generally well-established. Approximately 53% of private school parents engaged in government jobs, whereas the students enrolled in government primary schools belong to financially weaker families. Very few children from low-income families have access to online education because of the smartphone’s unavailability and educational backwardness (Azubuike et al., 2020). The parents who send their children to private schools are economically sound and educated (De et al., 2001). The COVID-19 Pandemic has given an undue advantage to the 53% of

| Type of school | Average hour/Day (%) | Pearson’s Chi-squared ($\chi^2$) test |
|---------------|----------------------|--------------------------------------|
|               | Less than 1          | 1–2                                  | 2–3          | More than 3  | No study  |
| Government    | 15.60                | 31.70                                | 23.50        | 11.50      | 17.70     | <0.001*  |
| Private       | 0.90                 | 24.50                                | 41.00        | 33.60      | 0.00      |          |

Source: Online Survey 0.2021 and Compiled by the Researchers.

*Significant at 0.05% level of significance with d.f. 1.
parents who were engaged in government jobs and under the provision of working from home, and partial or total workplace closure have taken extra care in guiding their wards. However, the COVID-19 pandemic has created financial insecurity in lower-income families, and, therefore, child education is ignored as proper knowledge is crucial in digital studies (Scheerder et al., 2017). The educational background of the parents of government primary school students is inadequate. So, guiding their children is more or less not possible. According to the survey, 16.5% of parents of government primary school students are illiterate, while 52.3% of parents have completed 8th grade or higher. Simultaneously, our survey revealed that illiterate parents among the students reading in private schools were zero or nominal. Only 4.4% of private school parents have educational qualifications of up to eight standards or less, and the remaining are highly educated. Another contributory factor is that private tuition during the COVID-19 pandemic is halted, negatively affecting government and private school students. Since the parents of government schools, due to their educational drawbacks, depend heavily on private tuition, Moreover, the parents of government schools cannot continue private tuition due to the COVID-19 economic crisis. Private school students actively learn online and have good guidance from educated parents and family members. So it is very clear from the above discussion that schools’ closing during the 18-months pandemic led to a disparity between government and private school students, which will lead to an alarming situation.

| Variable                              | Coefficient | SE  | Sig   | Odds ratio |
|---------------------------------------|-------------|-----|-------|------------|
| Sex                                   | −0.480      | 0.392 | 0.221 | 0.618      |
| Education level                       |             |     |       |            |
| Graduate and above ®                  |             |     |       |            |
| Illiterate                            | −6.454      | 1.515 | 0.000*** | 0.002      |
| Primary                               | −4.619      | 1.226 | 0.000*** | 0.010      |
| Middle school                         | −4.484      | 1.199 | 0.000*** | 0.011      |
| High school                           | −2.949      | 1.198 | 0.014*** | 0.052      |
| Income level (rs.)                    |             |     |       |            |
| Above 30000 ®                         |             |     |       |            |
| Below 5000                            | −4.754      | 1.278 | 0.000*** | 0.009      |
| 5,000–15,000                          | −2.267      | 1.196 | 0.058*  | 0.104      |
| 1,5000–30,000                         | −0.965      | 1.221 | 0.430  | 0.381      |
| Occupation                            | −0.271      | 0.221 | 0.220  | 0.762      |
| Location                              | 0.684       | 0.304 | 0.025** | 1.983      |
| knowledge about online education      | 0.142       | 0.173 | 0.413  | 1.153      |
| Network difficulties                  | 2.137       | 0.534 | 0.000*** | 8.476      |
| N                                     | 473         |     |       |            |
| Constant                              | 5.628       |     |       |            |
| Chi-square                            | 420.683     |     | p = 0.0001 |

***, ** and * represents statistical significance at the 1%, 5% and 10% Significance level ® represents the reference category.
Recommendations

The following recommendations may be made for reducing the digital divide among the students of government and private schools.

1. The parents may be counseled and sensitized to enforce the learning of their wards.
2. The printed question paper may be provided for the students’ assessment at home, and the parents can direct them to guide and invigilate their children.
3. The school should allow individual teachers’ class and subject-wise duties and make the duty list available to parents in printed leaflets.
4. The Government should take the initiative to vaccinate the teachers at the earliest so that schools may open very shortly.
5. Instead of giving an activity task every month, both government and private institutes must provide an activity task every week fortnightly since food distribution for the Mid Day Meal Program has already been running in government schools. The answer sheet may be submitted to the school within the stipulated time. Parents can come to school to collect the food materials during the lockdown period and even in the recent time after the unlocking period. Teachers can take the opportunity to assign and manage the students’ homework.
6. On their children’s behalf, the parents may call the specific teacher through the phone number provided in the leaflets. This way, the doubts of the students can be solved to some extent.
7. COVID-19 Pandemic provides a significant impetus for the digital revolution in the teaching-learning processes. Therefore, the government must construct advanced and adequate infrastructure for online education during the school closure days and beyond. The teachers who have nominal knowledge about the online education system become efficient.
8. Recreational classes such as painting, reciting, dancing, singing, etc., should be organized to avoid stress on the students during the pandemic. Both the government and private educational institutions should take a flexible approach to ensure the participation of all students.
9. Captions and transcriptions must be included in video lessons by the teacher so that all students can easily understand, and learning should be project-based and group-based.
10. Preventive measures such as "stay-at-home-when-sick" advisories, alternate day schooling or morning and evening shift schools with 50% capacity in each classroom, mandatory thermal screening, stepped lunch breaks, wider seating arrangements, and no guest visits should be implemented when schools re-open.

Conclusion

It is a harsh reality that the COVID-19 outbreak influenced education (Chaturbedi et al., 2020). Because of COVID-19, many governments excluded primary school students from the educational system (UNESCO, 2020). School closures affect students, teachers, and families (Bao et al., 2020) and have far-reaching economic and societal consequences (Aristovnik et al., 2020; Lindzon, 2020; UNESCO, 2020). The government primary education system should reform to ensemble the learner’s needs in the COVID-19 situation to mitigate the massive gap in the education system between government primary schools and private primary schools.

Last but not least, if the school does not re-open, the inequality between government primary school and private primary school children will increase day by day. Experimental data implies that during the COVID-19 pandemic, children were less prone to infection by the Novel Corona Virus than adults (Kuchar et al., 2021). Thus, it is highly recommended to open the school with standard
operating procedures (SOPs) or frame policies to reduce the learning gap due to the digital divide between government and private primary school students.

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