

Teaching and learning in the Covid 19 pandemic: Perception of the students with particular reference to West Bengal

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Abstract

The entire universe is going through a tough situation at this juncture as the Covid 19 pandemic has hit hard to put the economy in a crisis. As the pandemic has made global human beings to lead a life in a different way, the teaching and learning process has also given a new regime which has certain disadvantages along with few prospects as well. E-learning has become the new normal in the Covid 19 era where students are engaged virtually in the learning process which is much challenging compared to the physical classroom. The pandemic has created depression and anxiety among students due to the unfavorable study environment at home. At this moment, it will be of immense importance to do serious research regarding the teaching and learning process that is carried out in this pandemic environment. The researchers have done primary survey via online tools and have performed non-parametric tests to better ascertain the virtual learning that is carried out in this pandemic situation. The results are mixed having statistically significant and insignificant results and are justified by giving several recommendations along with the conclusion that is made by the researchers.

Keywords: Covid 19, Pandemic, E-learning, New Normal, Online Tools.

JEL Codes: C12, C88, D53, G41, Y10



Background

Ever since the novel coronavirus was identified in the city of Wuhan which is in China, then there was the spreading of the pandemic into every country that left every economy in a disruptive condition be it physically or economically. The entire universe is looking for a solution to this pandemic in terms of vaccination but still, now research is going on for the same. To stop spreading of the pandemic almost every country imposed lockdown which is only the possible solution as of now. Due to the pandemic imposed lockdown to avoid physical social distancing, the economy of every country hit hard where India is among the worst affected countries. The pandemic has affected the mental health along with the physical health of individuals in the economy. Due to the pandemic imposed lockdown, unemployment rose to a large extent where employees are losing jobs along with pay cuts. The daily wage earners and the vulnerable groups will be the most affected ones as 53% of the business are expected to be significant affected due to the pandemic. There is a severe liquidity crisis in the market which is negatively affecting the stock market as the perception of the investors turned negative in the pandemic. Several MSMEs and NBFCs also got affected due to the lockdown along with tourism, hospitality, aviation, automobile, oil, gas and real estate sectors which are at the verge of more risk than other sectors. The pandemic has given a challenge to the policymakers to decide between whether to close down the economy to save lives or to keep it open to save the economy. We can't ignore that hardly a sector would remain unaffected because of the pandemic crisis.

The pandemic affected all these sectors along with the educational systems worldwide leading to a nearly total closure of schools, colleges and universities. Due to the closure of educational institutions, it is estimated to affect around 600 million learners across the globe which is a serious matter to think about. The closure of schools and colleges because of the pandemic may not cause a short-term impact but can give a long-term impact which can have several economic and societal consequences in the future. According to UNESCO report, the pandemic will



adversely impact over 290 million students across 22 countries due to the closure of schools in the wake of the lockdown and the impact will not only weaken the fundamentals of students but it will also lead to loss of human capital as well as economic opportunities in the long run. The pandemic has left us to think in a different and innovative way in the new normal which leads to e-learning and the continuation of virtual learning through different online tools. Virtual learning is the only possible solution till now in the pandemic but it can hardly replace the physical classroom in the new normal and that's where the impacts on education are severe. Several educational institutions had no choice but to embrace e-learning to continue the flow of momentum but the connection between teachers and students will be different in virtual classes compared to physical face to face classroom. But in a country like us, uninterrupted access to the internet is yet to become a reality which will hamper the flow of online learning especially for students who don't have access to go for e-learning. Moreover, online education needs to go for cognizance of different learning pace of students as customized solutions for the students will be a major problem in this phase. The continuous use of electronic devices used for e-learning and it's increased screen time can give anxiety and stress among the minds of young students. Educational Institutions also need to understand that e-learning is more than converting class notes into PDFs or giving them e-books. Online teaching and learning process cannot be a substitute for physical classroom teaching but this is the only possible solution until now as e-learning should give some momentum for the students in this pandemic period. Due to the pandemic the academic calendar has also hit hard at the assessments and exams especially final year examinations has been in a halt which is a major tensed situation among students as the admissions for new sessions and entrance examinations in universities are facing challenges. Other than academic students, several aspirants are also facing stress as the competitive examinations in this pandemic is also a devastating and distressful process.



Literature Review

There are not many literatures on this area ranging from research publications to various articles and reports. The extensive literature of this area is from wide time span. The researchers have gone through the following existing literatures in the area for the purpose of identification of the research gap.

Ghavifekr, S. & Rosdy, W.A.W. (2015) studied that the technology based teaching and learning is more effective as compared to traditional classroom. The researchers found that using ICT tools and equipment will prepare an active learning environment that is more interesting and effective for both teachers and students. The researchers also studied that students learn more effectively with the use of ICT as the lesson designed in ICT based teaching are more engaging and interesting and the participants agreed that integrating ICT can foster student's learning. They also said that the integration of ICT in classroom needs serious consideration in order to increase the competency of the country's education system and also the role of teacher's will be crucial in the 21st century education.

Sheikh, A. Y. (2017) found that education in our economy has expanded very rapidly in the last six decades but still it is not accessible to all and that's the reason being still a large section of the population remains illiterate in our economy and a large number of children's do not get even primary education. Therefore, this has resulted in exclusion of large section of the population from contributing to the development of the country fully and has also prevented them from utilizing the benefits of whatever development have taken place for the benefit of the people. The researchers concluded that there are immense opportunities and human resources in our economy but to utilize that proper education is needed.

The Hindu, May 11, 2020, Online learning tools have become new normal in this Covid 19 era which has also become new norm not only for the students but also for the parents and teachers, but this has abrupt transition as online teaching hardly compensates for the absence of the classroom experience. They also stated that high stake examinations will be more complicated in a situation like this and therefore we should get back to normal teaching learning process.



The Indian Express, July 07, 2020, told in the report that the disruptive changes that take place in the education sector due to the Covid 19 pandemic has been restored by technological interventions with online teaching, but in an economy like us, such interventions can result in the exclusion of the marginalized. The use of online resources depends on access to electricity, electronic devices, electronic gadgets and internet connectivity but the spread of digital infrastructure in India is uneven which is the main problem in a developing country like us. The report concluded that the educational institutions must ensure equity and inclusion should be central to their plans of education

As per the report published in The Financial Express, July 27, 2020 states that the overall learning is now going to depend on the kind of activities that the schools will start and will sustain once they reopen. The report also highlighted that the teacher's should conduct one on one oral assessment of the student's capability and that should be done with each student by each teacher which will help the teachers to reconnect with the students that will be effective in current situations teaching and learning. Finally, the institutions should come up with teaching methods that will address the concern about equity for all.

Research Gap

Based on the above detailed review of literature, the researchers have found that literature contains no specific research work regarding the perception of the students and how their learning got affected in this pandemic. Considering this as a major research gap having a social significance in our economy, the researchers have identified several sets of questions as research objectives in fulfilling this research gap.

Objective of the study:

- ✓ To study whether there is any difference in infrastructural problems associated with online learning in different demographic areas.



- ✓ To study whether there is any difference in having a problem with the Lack of adequate technical skills associated with online learning in different demographic areas.
- ✓ To study whether there is any difference in the level of satisfaction among the students of different education levels associated with online learning during this pandemic.
- ✓ To study whether there is any impact of devices on the level of satisfaction among the students associated with online learning during this pandemic.
- ✓ To study whether there is any difference in preference towards learning from online medium over offline medium in the near future.

Research Methodology:

The current study has been conducted based on primary sources of data collected through a questionnaire using Google form from 402 different respondents within West Bengal to know the perception of students regarding online learning during this global pandemic as per feasibility. The questionnaire was categorical and the data has been categorized using the 5-point Likert Scale. Mann-Whitney U Test, Kruskal-Wallis Test and Chi-Squared test has been conducted using SPSS and data presentation done with the help of MS-Excel.

Research Hypotheses:

H₀₁ = There is no significant difference in infrastructural problems associated with online learning in different demographic areas.

H₀₂ = There is no significant difference in having a problem with the Lack of adequate technical skills associated with online learning in different demographic areas.

H₀₃ = There is no significant difference in the level of satisfaction among the students of different education levels associated with online learning during this pandemic.

H₀₄ = There is no significant impact of devices on the level of satisfaction among the students associated with online learning during this pandemic.



H_{05} = There is no significant difference in preference towards learning from online medium over offline medium in the near future.

Data Presentation and Analysis:

Table 1: Gender Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	206	51.2	51.2	51.2
	Male	196	48.8	48.8	100.0
	Total	402	100.0	100.0	

Table 2: Demographic area Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	227	56.5	56.5	56.5
	Semi-urban	82	20.4	20.4	76.9
	Rural	93	23.1	23.1	100.0
	Total	402	100.0	100.0	

Table 3: Education level Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Upto 10	40	10.0	10.0	10.0
	10+2	43	10.7	10.7	20.6
	Undergraduate	195	48.5	48.5	69.2
	Post Graduate and above	124	30.8	30.8	100.0
	Total	402	100.0	100.0	

Table 1 depicts respondents' gender where it is observed that out of 402 respondents 206 were female and 196 were male, 227 respondents (56.5%) are from Urban area, 82 (20.4%) from semi-urban are and 93 (23.1%) from the rural area as shown in Table



2. Out of all the participants considered for the study, smart-phone and/ or tablet is used by 46 people (40.4%) to attend webinars and the rest uses desktop or laptops as shown in Table 3. Out of all respondents, 40 students (10%) are from 10th level or below, 43 students (10.7%) are from 10+2 level, 195 students (48.5%) are from undergraduate level and 124 (30.8%) of them are from postgraduate or above.

H_{01} = There is no significant difference in infrastructural problems associated with online learning in different demographic areas.

H_{11} = There is a significant difference in infrastructural problems associated with online learning in different demographic areas.

First Hypothesis Test Summary

Table 4: Descriptive Statistics

	N	Percentiles		
		25th	50th (Median)	75th
Whether non-availability of proper infrastructure distracts your online learning during e-classes.	402	3.00	3.00	4.00
Demographic area	402	1.00	1.00	2.00

Kruskal-Wallis Test

Table 5: Ranks

	Demographic area	N	Mean Rank
Whether non-availability of proper infrastructure distracts your online learning during e-classes.	Urban	227	189.35
	Semi-urban	82	203.03
	Rural	93	229.80
	Total	402	



Table 6: Test Statistics^{a,b}

	Whether non-availability of proper infrastructure distracts your online learning during e-classes.
Chi-Square	8.699
df	2
Asymp. Sig.	.013

a. Kruskal Wallis Test

b. Grouping Variable: Demographic area

Source: Compiled through SPSS

Based on the result from Table 6 it can be concluded that the null hypothesis is being rejected at 5% level of significance with a P-value of 0.013 ($P < 0.05$). Hence there is a significant difference in infrastructural problems associated with online learning in different demographic areas. Based on Table 5 it has been observed that the mean rank of the students of urban and semi-urban areas are hovering towards neutral and agree with the problems whereas the problems are acute in the rural areas and the mean rank of the students of rural areas hovering towards strongly agree.

H_{02} = There is no significant difference in having a problem with the Lack of adequate technical skills associated with online learning in different demographic areas.

H_{12} = There is a significant difference in having a problem with the Lack of adequate technical skills associated with online learning in different demographic areas.



Second Hypothesis Test Summary

Table 7: Descriptive Statistics

	N	Percentiles		
		25th	50th (Median)	75th
Whether Lack of adequate technical skills affects your online learning during e-classes.	402	3.00	3.00	4.00
Demographic area	402	1.00	1.00	2.00

Kruskal-Wallis Test

Table 8: Ranks

	Demographic area	N	Mean Rank
Whether Lack of adequate technical skills affects your online learning during e-classes.	Urban	227	186.71
	Semi-urban	82	220.24
	Rural	93	221.08
	Total	402	

Table 9: Test Statistics^{a,b}

	Whether Lack of adequate technical skills affects your online learning during e-classes.
Chi-Square	9.276
df	2
Asymp. Sig.	.010

a. Kruskal Wallis Test

b. Grouping Variable:
Demographic area



Source: Compiled through SPSS

Based on the result from Table 9 it can be concluded that the null hypothesis is being rejected at 5% level of significance with a P-value of 0.010 ($P < 0.05$). Hence there is a significant difference in having a problem with the Lack of adequate technical skills associated with online learning in different demographic areas. Table 8 reveals that the mean rank of the students of urban and semi-urban areas are hovering towards neutral and agree with the problems whereas the problems are acute in the rural areas and the mean rank of the students of rural areas hovering towards strongly agree.

H_{03} = There is no significant difference in the level of satisfaction among the students of different education levels associated with online learning during this pandemic.

H_{13} = There is a significant difference in the level of satisfaction among the students of different education levels associated with online learning during this pandemic.

Third Hypothesis Test Summary

Table 10: Descriptive Statistics

	N	Percentiles		
		25th	50th (Median)	75th
Are you satisfied with online classes conducted by your institution?	402	3.00	4.00	4.00
Education level	402	3.00	3.00	4.00

Kruskal-Wallis Test

Table 11: Ranks

	Education level	N	Mean Rank
Are you satisfied with online classes conducted by your institution?	Upto 10	40	250.36
	10+2	43	184.45
	Undergraduate	195	194.78
	Post Graduate and above	124	202.21
	Total	402	



Table 12: Test Statistics^{a,b}

	Are you satisfied with online classes conducted by your institution?
Chi-Square	10.305
df	3
Asymp. Sig.	.016

a. Kruskal Wallis Test

b. Grouping Variable: Education level

Source: Compiled through SPSS

Based on the result from Table 12 it can be concluded that the null hypothesis is being rejected at 5% level of significance with a P-value of 0.016 ($P < 0.05$). Hence there is a significant difference in the level of satisfaction among the students of different education levels associated with online learning during this pandemic. Table 11 reveals that the mean rank of the students of '10+2 level' and 'undergraduate level' are hovering towards neutral in terms of satisfaction while the group of students 'upto 10th level' and 'postgraduate level' tend towards satisfied about online classes conducted by their institutions.

H_{04} = There is no significant impact of devices on the level of satisfaction among the students associated with online learning during this pandemic.

H_{14} = There is a significant impact of devices on the level of satisfaction among the students associated with online learning during this pandemic.



Fourth Hypothesis Test Summary

Table 13: Descriptive Statistics

	N	Percentiles		
		25th	50th (Median)	75th
Are you satisfied with online classes conducted by your institution?	402	3.00	4.00	4.00
Which device's you use for your e-learning?	402	1.00	1.00	1.00

Mann-Whitney Test

Table 14: Ranks

	Which device's you use for your e-learning?	N	Mean Rank	Sum of Ranks
Are you satisfied with online classes conducted by your institution?	Smartphone and/or Tablet	313	199.92	62576.00
	Desktop and/or Laptop	89	207.04	18427.00
	Total	402		

Table 15: Test Statistics^a

	Are you satisfied with online classes conducted by your institution?
Mann-Whitney U	13435.000
Wilcoxon W	62576.000
Z	-.557
Asymp. Sig. (2-tailed)	.578

a. Grouping Variable: Which device's you use for your e-learning?



Source: Complied through SPSS

Based on the result from Table 15 it can be concluded that there the null hypothesis can not be rejected at 5% level of significance with a P-value of 0.578 ($P > 0.05$). Hence it is indicating that there is no significant impact of devices on the level of satisfaction among the students associated with online learning during this pandemic.

H_{05} = There is no significant difference in preference towards learning from online medium over offline medium in the near future.

H_{15} = There is a significant difference in preference towards learning from online medium over offline medium in the near future.

Fifth Hypothesis Test Summary

Chi-Square Test

Frequencies

Table 16: What is your preference for future classes after the pandemic?

	Observed N	Expected N	Residual
Offline	214	134.0	80.0
Blended	108	134.0	-26.0
Online	80	134.0	-54.0
Total	402		

Table 17: Test Statistics

	What is your preference for future classes after the pandemic?
Chi-Square	74.567 ^a
df	2



Asymp. Sig.	.000
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a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 134.0.

Source: Compiled through SPSS

Based on the result from Table 17 it can be concluded that the null hypothesis is being rejected at 1% level of significance with a P-value of 0.000 ($P < 0.01$) at 2 degrees of freedom. Hence there is a significant difference in preference towards offline medium over online medium. From Table 16 it can be observed that the majority of the participants prefer offline (i.e., traditional way of teaching-learning) and few of them are interested in the mere online mode of learning for the future. It is also found from the above table that several students are interested in the blended mode of learning.

Findings:

- It is observed that there exists a difference in infrastructural problems associated with online learning in different demographic areas. Based on the above analysis, it has been observed that students in rural areas are facing more severe problems than those in urban and semi-urban areas.
- It has been observed that there exists a difference in having a problem with the Lack of adequate technical skills associated with online learning in different demographic areas. Based on the above results, it is seen that rural students are facing a lack of technical knowledge during e-classes as compared to urban and semi-urban areas.
- It has been observed that there is a significant difference in the level of satisfaction among the students of different education levels associated with online learning during this pandemic.



- It has been observed that that there is no significant impact of devices on the level of satisfaction among the students associated with online learning during this pandemic.
- It has been observed that the majority of the students prefer the offline mode of learning (i.e., traditional way of teaching-learning). It is also an interesting finding from the above results that several students are interested in the blended mode of learning.

Conclusion:

COVID-19 pandemic has disrupted the education sector, and no one ever imagined that learning will be shifted online, at least not in India. Virtual classes alone can not be a feasible alternative for every student students and it can not be a substitute for traditional classroom teaching. A majority number of the students still want the traditional classroom rather than e-classes as the connection between the teacher and students plays an important role. Virtual classes in our economy have faced a big challenge since many of the students don't have the devices to participate in virtual classes. Along with students, some teachers are not effective in the age of virtual classes during this pandemic and that needed to be taken care of. The rural part of our country has faced digital inequality along with a lack of threshold infrastructural facilities. This is a difficult situation but we believe we will overcome the pandemic and have a better education system for every resident of our country.

Recommendation:

On the eve of the global pandemic, there remain infrastructural challenges inhibiting not-so-privileged from enjoying equal accessibility, convenience and economy of online learning. The policymaker and academicians should focus on the infrastructural part of the country, mainly in rural India where the students suffering from non-availability of the threshold resources for e-learning. It is thus recommended that educational institutions should take steps to provide infrastructural



facilities to include those underprivileged. Inclusion alone is not enough, there needs to be training on digital literacy for providing full benefit. Regulatory bodies should pay more attention to the rural education system which will build a flexible Indian education system in the future. Policymakers should focus on system loopholes before making any decisions regarding online classes. Academicians should focus on the optimal blending process of the system according to the convenience of the students that they can maximize their knowledge during this crisis period as well as the post-crisis period. Every individual student should be taken care of in this tough situation and proper policy is needed to implement the classes for students of remote-rural areas. Internet connection should reach far and wide and should also be economical so that rural and semi-urban students can get access to the virtual classes as this is the only mode that is feasible in the pandemic situation. Educational Institutions should come forward and the regulatory bodies should make some policies so that every individual student can opt for such classes. With the opening of the economy, education needs to be included in the list of essential services and there should come up with low tech and no tech solutions for all level students that can help to mitigate their learning losses.

Limitations and Future Scope:

During this global pandemic, it was not feasible to collect data through physical survey/interview method and hence the Google form was used and the study was mainly based on small samples where data has been collected from selected parts of West Bengal. An extensive study can be conducted using larger samples, more parameters of different regions and sophisticated statistical tools.



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