

A Study on the Impact of Digital Learning on the Higher Educational Institutions (Heis) In India: A Post Covid Era Analysis

Priyanka Das

Research Scholar, Department of Commerce, University of Calcutta & Lecturer, Department of Commerce, Maharaja Sris Chandra College

Date of Submission: 02-08-2020

Date of Acceptance: 20-08-2020

ABSTRACT: There has been a drastic change in the working of the entire system of the world economy due to the sudden outbreak of the deadly disease .i.e. Covid 19. This has made life very uncertain, lot of new changes are going on constantly in order to sustain during this pandemic situation. The education sector has also faced a drastic change in the pattern of imparting and receiving education. There has been a forceful shift from the traditional chalk and talk method to virtual mode of teaching. This study focuses on identifying the impact of such Digital Learning on both the teachers as well as on the students of the Higher Educational Institutions (HEIs) in India in the post Covid 19 scenario. For this purpose, Primary Survey was conducted through a well-structured research questionnaire. The target respondents were the educators of HEIs including both private institutions as well as governmental institutions. Data of 150 respondents so collected have been analyzed by performing non- parametric Chi- square Goodness of fit test as well as Pearson's Chi-Square significance of association test. Test results revealed that the new system of learning and teaching has resulted on one side an increase in attendance percentage of students in the private institutions, but on the other side they are facing depression. Results also showed that teachers were also criticized by their students during such online sessions, faced extra burden for arranging such classes as well as due to the technical issues and there has been gradual deterioration in the interaction level etc.

KEYWORDS: Higher Educational Institutions (HEIs), Chi- Square Tests, Covid 19, Digital Learning, Primary Survey.

I. INTRODUCTION

The COVID-19 pandemic has affected educational systems worldwide, leading to the near-total closures of schools, universities and

colleges. It has changed the entire system of imparting and receiving education. Although previously teachers of the Higher Educational Institutions (HEIs) in India were more acquainted with the traditional methods of teaching .i.e. face to face lecture sessions in the class room with a few exception of a blended form of teaching involving both traditional as well as through smart class presentations. Such a situation forced the teachers or the educational institutions to shift from the traditional chalk and talk method of teaching to online system of teaching and learning overnight. This has resulted in major depression to the students due to their uncertain future endeavors. The entire system have become paralyzed, no proper schedule is being followed to conduct examinations even though the teachers managed to complete the curriculum for the said session. The outgoing students could not find any way out to chalk out their future plans. The teachers are also struggling day after day in order to adapt to such new technologies and also constantly motivating their students so that they don't get depressed due to this prevailing situation. There are a number of technologies available for online education but sometimes they create a lot of difficulties. These difficulties and problems associated with modern technology range from downloading errors, issues with installation, login problems, problems with audio and video, and so on. Sometimes student finds online teaching to be boring and unengaging. Online learning has so much of time and flexibility that students never find time to do it. Personal attention is also a huge issue facing online learning. Students want two-way interaction which sometimes gets difficult to implement. The learning process cannot reach its full potential until students practice what they learn (Dhawan, 2020).

According to a QS survey measuring the impact of coronavirus on higher education, ~45% of prospective international students surveyed have

stated the intention to defer their admission until next year, and ~10% have suggested that they no longer intend to study overseas. More importantly, there would be a drastic increase in the dropout rates in the HEIs as compared to the pre pandemic era.

The present study primarily aims at reflecting the impact of sudden switch over to digital learning on the teachers as well as students of the HEIs in India due to the outbreak of Covid 19.

II. LITERATURE REVIEW

Some of the earlier literature on the impact of digital learning on the Educational Institutions both at the national as well as international level are listed below:

Singh (2016) emphasized on the challenges faced by teachers in India to implement e-learning and makes an attempt to suggest varied solutions to the awareness, implementation and comfortability with regard to the e-learning solutions by the teachers in their teaching-learning processes. The study highlighted the fact that teachers are needed to be prepared themselves for the changing role that the technological development has brought.

Gond and Gupta (2017) in their research paper have tried to give an overview of digital education, components of digital education, benefits of digital education in India, the future scope and possible challenges of an Indian society for moving towards digital education. The study clearly points that development of education infrastructure is required for the development of digital education across the country. This will lead to considerable increase in infrastructure investment in the education sector.

Mahajan and Kalpana (2018) in their study examined the student's perceptions about e-learning which would help in a newer teaching learning experiences on the campus. Study results clearly depicted that e-learning has its benefits from a student's perspective and it will have a positive influence on their performance with better understanding of their courses.

Trakru and Jha (2019) studied the effectiveness of e-Learning as it relates to the e-Learning experience of students undertaking higher education. More specifically the study dealt with evaluating the effectiveness of e-Learning across gender, course and city. The results of this research revealed that e-Learning has been willingly accepted by students as a source of reference and academic illumination. However, female students were equally effectively using e-Learning when compared to their male counterparts.

Dhawan (2020) in her article included the importance of online learning and Strengths, Weaknesses, Opportunities, & Challenges (SWOC) analysis of e-learning modes in the time of crisis. This article also put some light on the growth of EdTech Start-ups during the time of pandemic and natural disasters and includes suggestions for academic institutions of how to deal with challenges associated with online learning. The study concluded that Online methods of teaching support and facilitate learning-teaching activities, but there is a dire need to weigh the pros and cons of technology and harness its potentials.

III. RESEARCH OBJECTIVES

The primary objective of this research article is to identify the possible impacts on the educators as well as on the students of the Higher Educational Institutions (HEIs) in India for the sudden switch over to online mode of teaching learning process due to the outbreak of Covid 19.

IV. RESEARCH HYPOTHESIS

For the purpose of this study, the following research hypothesis have been framed based on the above mentioned research objectives:

H₀₁: There is no significant association between the Type of the Institution and the Attendance percentage of students of HEIs in the online system.

H₀₂: Fit is good or educators are not facing extra burden for arranging such online classes with different modes.

H₀₃: There is no significant association between Gender and the level of criticism faced by the Educators of HEIs.

H₀₄: Fit is good or the educators are receiving salary exactly as before Covid 19 era.

H₀₅: There is no significant association between Mode of online class and lack of Teacher-Student Interaction due to online system.

H₀₆: There is no significant association between Technical issues faced and Extra burden of the Educators of HEIs.

H₀₇: Fit is good or the students are not facing depression due to the new system of learning.

V. RESEARCH METHODOLOGY

Sample: For the purpose of this study, primary data have been collected from 150 respondents associated with teaching profession. Teachers/ Professors of the Higher Educational Institutions (HEIs) i.e. University level and College level comprising of both the private sector as well as government sector have been considered in the said sample.

For the purpose of this study qualitative data have been collected through a well-structured questionnaire from the Educators including full time faculties, visiting faculties and also contractual faculties both at the college as well as university level. In order to address to the above research hypothesis, non- parametric Chi-square tests have been performed.

Chi- Square Goodness of fit test has been performed using the SPSS 16 software for a single categorical variable with the Null hypothesis that the fit is good or there is no significant difference between the observed value and the expected value of the distribution, against the Alternative hypothesis that the fit is not good or there is a significant difference between the observed value and the expected value of the distribution.

Pearson’s Chi Square test have been conducted in order to examine whether there is any significant

association between the two categorical variables which are either in nominal scale or in ordinal scale or a combination of both.

VI. DATA ANALYSIS, FINDINGS AND DISCUSSIONS

Figure 1 and **Figure 2** below gives a clear picture with respect to the Gender and the sector to which the educator belongs. Out of the total 150 respondents 53% comprise of male Educators while the remaining 47% comprise of female educators. In order to analyze the challenges that are being faced by the Educators, the viewpoint of the educators associated with private sector as well as government sector have been observed. Among the respondents 55% are associated with the government sector, while 45% are working under government sector.

Figure 1: Gender of Educators (%)

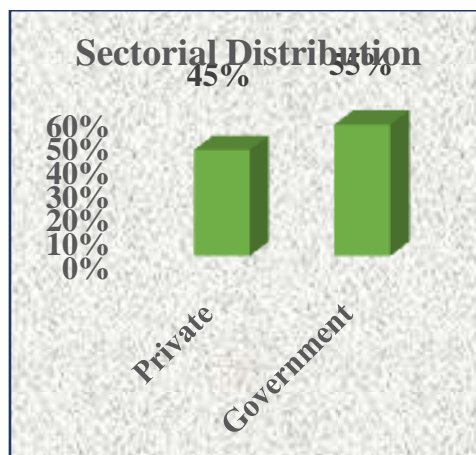
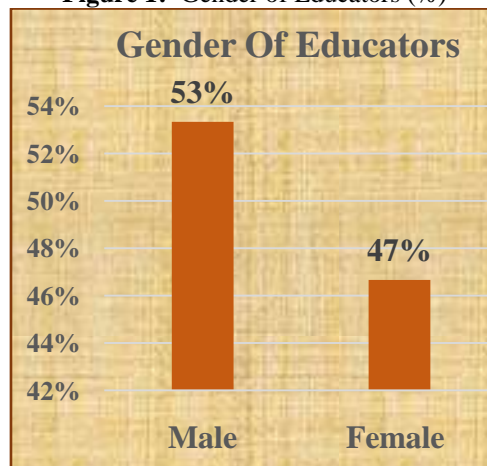


Figure 2: Sectorial Distribution (%)

Source: Author’s Compilation from Primary Survey **Source:** Author’s Compilation from Primary Survey

Figure 3 presented below highlights that keeping in mind the availability of the required infrastructure, educators have tried their best to make arrangement to take online classes. Results of the survey revealed that out of 150 respondents as high as 97% of the teachers took online classes and only 3% failed to deliver lecture through online classes. One of the reason may be the location of the institutions in the remote areas as a result of which students also could not afford such online facility and also due to some problem on the part of the educators itself. Overall we may say a larger population of the teachers have conducted online classes. But the question is how much successfully it was conducted and what were its pros and cons?

One of the important issue that disrupted and still disrupts the effective teaching learning process during this period is the technical problems attached while conducting classes through online mode. Along with this pandemic, another devastating natural phenomenon which acted as a barrier in this process was ‘Amphan’. It severely destroyed the satellite networks which was a major hindrance as all the connections were totally disconnected for around 10days. As high as 73% of the teachers reported that they faced technical problems in order to maintain continuity, however, the rest 23% could access internet connection appropriately as represented in **Figure 4** below.

Figure 3: Online classes conducted (%)

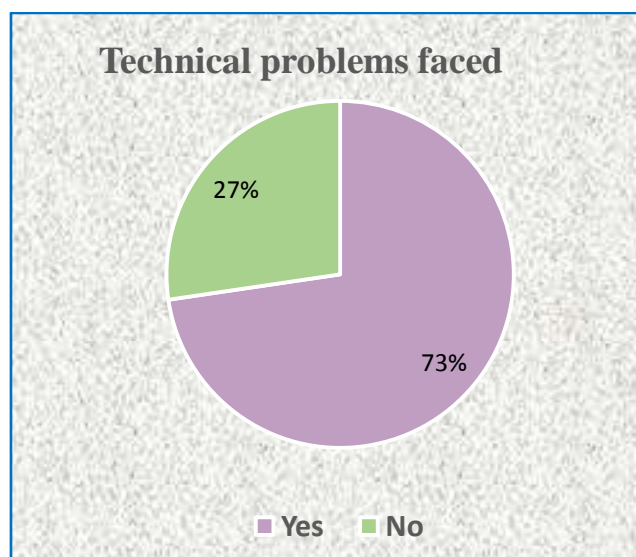
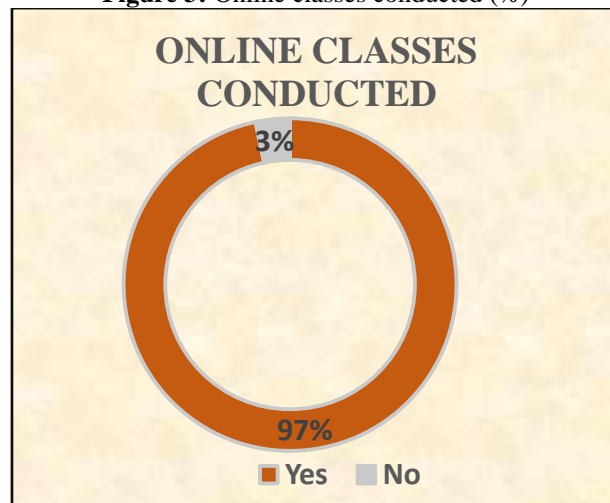


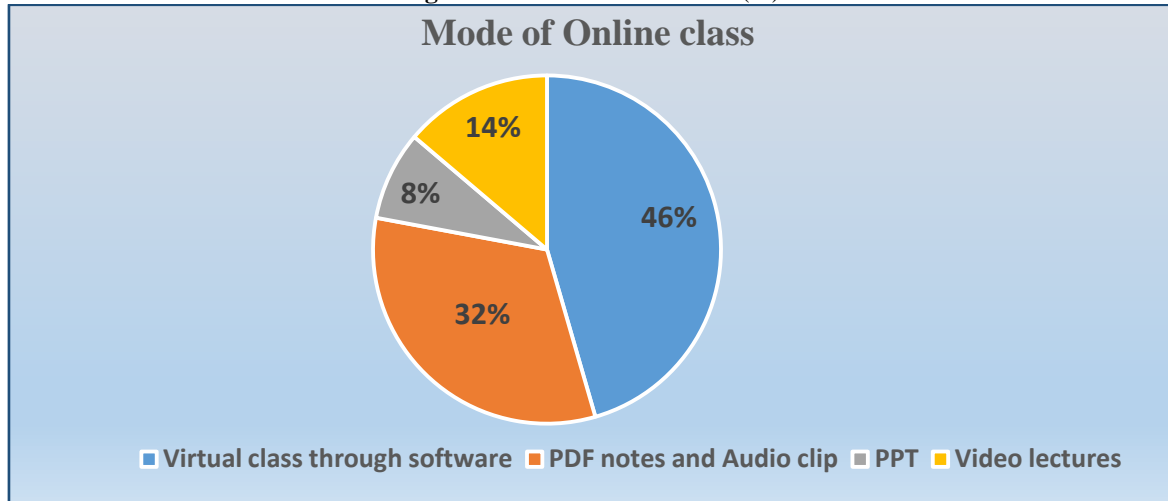
Figure 4: Technical problems faced (%)

Source: Author’s Compilation from Primary Survey **Source:** Author’s Compilation from Primary Survey

Teachers irrespective of the type of the institution have opted for various modes through which they can conduct their online classes as shown in **Figure 5**. It mainly depends upon the availability of required infrastructure and also keeping in mind the welfare of the students. Among 145 respondents, who opted for online

classes, 46% chose Virtual classes through software as their mode of teaching followed by PDF notes and Audio clips (32%), Video lectures (14%) and PPT (8%). Virtual classes through software has the benefit of having more scope for interaction between the teacher and the students as compared to the other teaching modes.

Figure 5: Mode of Online class (%)

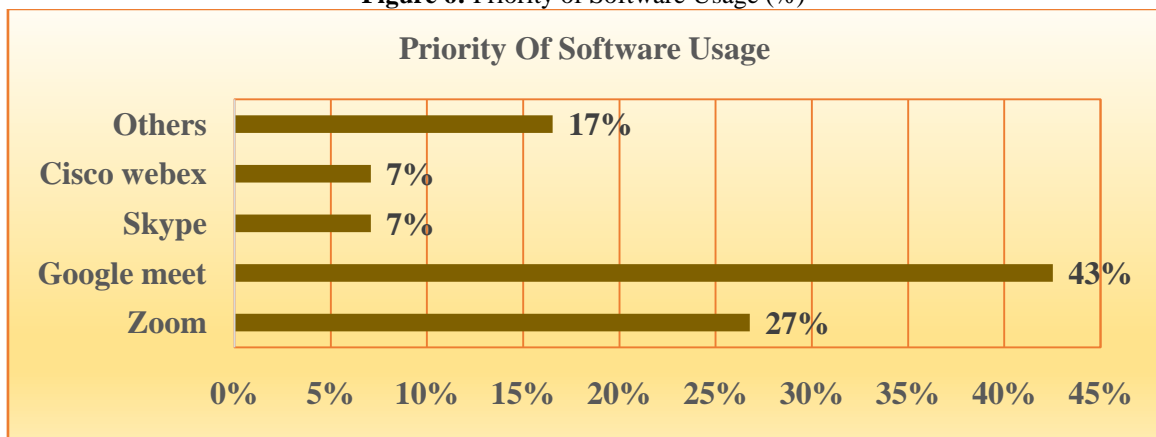


Source: Author's Compilation from Primary Survey

Figure 6 presented below posits the preferences of the educators in terms of the software. Out of 150 respondents 145 respondents agreed that they are conducting online classes in order to maintain the smooth flow of teaching learning process. Google meet (43%) have been found to be the highly used software by the teachers which is mainly due to its flexibility, user

friendly application and also it is much more secured as compared to other softwares. Followed by Zoom (27%), Skype (7%) and Cisco Webex (7%), while the remaining educators (17%) have opted for some other options in order maintain continuity in the teaching system.

Figure 6: Priority of Software Usage (%)



Source: Author's Compilation from Primary Survey

As a result of the outbreak of the pandemic, one of the common problem faced by

most of the individual is fear of losing job and also whether they would be paid exactly the

same salary as they were being paid in the pre – Covid era. From the survey it is clear that, teachers who are appointed on contractual basis or on variable payment basis faced a big challenge during this situation. As because, they could not conduct classes in the frequency as they used to take classes in the normal scenario. Hence, teachers mainly the contractual teachers irrespective of the type of sector were not being paid exactly the same salary as before. **Figure 7** below posits that 74% of the educators have received the same salary as before and they are mainly the full time teachers associated at the university or at the college level. While the remaining 26% which are assumed to be the visiting faculties were deprived of getting either any salary or even if they received were not exactly as before. **Figure 8** below highlights the fact that whether the teachers are facing any kind of difficulty or whether they are overburdened for the

purpose of arranging such online classes. It is very natural that most of the senior teachers or even the teachers who have joined this profession recently may face some problems at the initial stage for such arrangement. As this is totally a new system and it would definitely take some time to cope with this process. Earlier, they were required to make necessary arrangements to enlighten the students, but now besides preparing class notes, the teachers are required to first learn the working of the software, adapt the new technology and then comes delivering lectures. Survey results showed that as high as 71% of the teachers have reported that they have faced extra burden for making such arrangement while the remaining 29% could balance the situation without facing any extra burden.

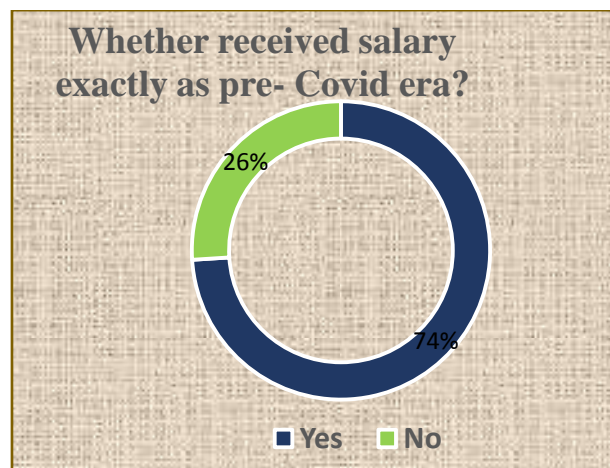


Figure 7: Receipt of Salary (%)

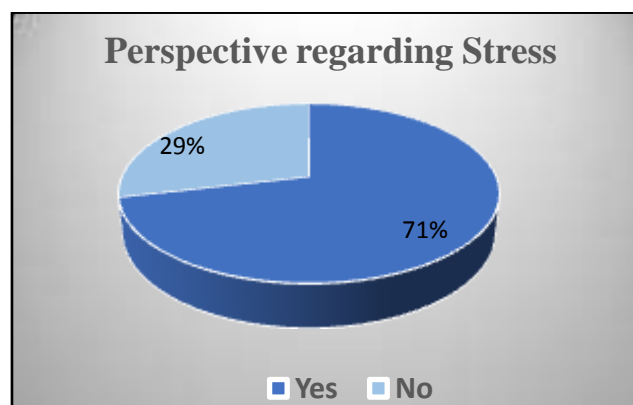


Figure 8: Stress of Educators (%)

Source: Author’s Compilation from Primary Survey
Source: Author’s Compilation from Primary Survey

Table 1 below clearly depicts that there is a strong evidence of significant association between type of the educational institution and the attendance percentage of the students in this online mode of teaching environment. Significant p value(0.014) at 5% level of significance rejects the null hypothesis and reveals that attendance percentage of students in the Private institutions have increased much more than those of

Government institutions in this online system. This is evident from **Table 2** below.

H₀₁: There is no significant association between Type of the Institution and the Attendance percentage of students of HEIs in the online system.

H₁₁: There is a significant association between Type of the Institution and the Attendance percentage of students of HEIs in the online system.

Table 1: Results of Chi- Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.562(a)	4	.014**
Likelihood Ratio	12.987	4	.011
Linear-by-Linear Association	5.557	1	.018
N of Valid Cases	150		

Source: Author’s Compilation using SPSS

Out of 67 respondents who are associated with private institutions, 14.90% and 44.80% have strongly agreed and agreed respectively that attendance % of students studying in the private institutions have increased due to switch over to online sessions and only 17.90% have disagreed the above fact. While within the government

institutions, out of 83 respondents, only 12% and 24.10% have strongly agreed and agreed respectively that attendance % of students have increased while as high as 43.40% disagreed that attendance % of government institutions have not increased in online class mode.

Table 2: Results of Cross tabulation (sector * attendance)

			Attendance					Total
			strongly disagree	disagree	neutral	agree	strongly agree	
Institution type	private	Count	8	12	7	30	10	67
		Expected Count	7.6	21.4	6.7	22.3	8.9	67.0
		% within sector	11.9%	17.9%	10.4%	44.8%	14.9%	100.0%
		% of Total	5.3%	8.0%	4.7%	20.0%	6.7%	44.7%
government		Count	9	36	8	20	10	83
		Expected Count	9.4	26.6	8.3	27.7	11.1	83.0
		% within sector	10.8%	43.4%	9.6%	24.1%	12.0%	100.0%
		% of Total	6.0%	24.0%	5.3%	13.3%	6.7%	55.3%
Total		Count	17	48	15	50	20	150

Expected Count	17.0	48.0	15.0	50.0	20.0	150.0
% within sector	11.3%	32.0%	10.0%	33.3%	13.3%	100.0%
% of Total	11.3%	32.0%	10.0%	33.3%	13.3%	100.0%

Source: Author’s Compilation using SPSS

The test results as represented in **Table 3** below is less than 0.01.ie. 0.00, hence we reject the null hypothesis with 99% confidence interval that or educators are definitely facing extra burden for arranging such online classes with different modes.

H₀₂: Fit is good or educators are not facing extra burden for arranging such online classes with different modes.

H₁₂: Fit is not good or educators are facing extra burden for arranging such online classes with different modes.

Table 3: Results of Chi- Square Tests

	Burden
Chi-Square(a)	27.307
df	1
Asymp. Sig.	.000*

Source: Author’s Compilation using SPSS

Table 4 below posits that the p value of the Pearson Chi- Square statistic with 4 degrees of freedom is 0.082, hence we may reject the null hypothesis at 10% level of significance and accept the fact gender of the educator and the level of criticism faced by them while conducting online classes are significantly associated with each other.

H₀₃: There is no significant association between Gender and the level of criticism faced by the Educators of HEIs.

H₁₃: There is a significant association between Gender and the level of criticism faced by the Educators of HEIs.

Table 4: Results of Chi- Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.286(a)	4	.082***
Likelihood Ratio	9.179	4	.057
Linear-by-Linear Association	1.110	1	.292
N of Valid Cases	150		

Source: Author’s Compilation using SPSS

Another important challenge for the educators during this pandemic was, whether, they would receive exactly the same salary as before Covid 19 era. Significant p value of Chi-Square test as represented in **Table 5** below rejects the null hypothesis and clearly states that most of the

educators have not received exactly the same salary as before the pandemic situation.

H₀₄: Fit is good or the educators are receiving salary exactly as before Covid 19 era.

H₁₄: Fit is not good or the educators are not receiving salary exactly as before Covid 19 era.

Table 5: Results of Chi- Square Tests

	Salary
Chi-Square(a)	42.667
df	1
Asymp. Sig.	.000*

Source: Author’s Compilation using SPSS

However, besides this the teachers were still motivated to continue their teaching, so as to prevent any kind of disruption in the teaching learning process that may become a major barrier for the students in order to flourish in their future.

Table 6 below reported that, out of the total 150 respondents, 97% of the teachers took online classes, however out of this 24.80% of the teachers did not receive the same amount of salary as before.

Table 6: Results of Cross tabulation (Online class* Salary)

			Salary		Total
			Yes	No	
Online Class	yes	Count	109	36	145
		% within online class	75.2%	24.8%	100.0%
		% of Total	72.7%	24.0%	96.7%
	no	Count	2	3	5
		% within online class	40.0%	60.0%	100.0%
		% of Total	1.3%	2.0%	3.3%
Total	Count	111	39	150	
	% within online class	74.0%	26.0%	100.0%	
	% of Total	74.0%	26.0%	100.0%	

Source: Author’s Compilation using SPSS

The test results as reported in **Table 7** below clearly highlights the evidence that mode of the online class opted by the teacher and the level of interaction between the teacher and students have a significant association as significant p value (0.076) rejects the null hypothesis at 90% confidence interval. This means that after the adoption of the online mode of teaching there has been a serious issue of lacking in the student-

teacher interaction which is a major challenge for both the teachers as well as the students.

H₀₅: There is no significant association between Mode of online class and lack of Teacher-Student Interaction in online system.

H₁₅: There is a significant association between Mode of online class and lack of Teacher-Student Interaction in online system.

Table 7: Results of Chi- Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.565(a)	12	.076***
Likelihood Ratio	20.792	12	.054
Linear-by-Linear Association	.207	1	.649
N of Valid Cases	145		

Source: Author’s Compilation using SPSS

Significant p value(0.000) of Pearson Chi-Square test statistic as shown in **Table 8** below provides a strong evidence of significant association between Technical issues faced and Extra burden of the Educators of HEIs as it rejects the null hypothesis at 1% level of significance that is at 99% confidence interval.

H₀₆: There is no significant association between Technical issues faced and Extra burden of the Educators of HEIs.

H₁₆: There is a significant association between Technical issues faced and Extra burden of the Educators of HEIs.

Table 8: Results of Chi- Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	17.234(b)	1	.000*		
Continuity Correction(a)	15.593	1	.000		
Likelihood Ratio	16.291	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	17.119	1	.000		
N of Valid Cases	150				

Source: Author's Compilation using SPSS

The following test result as shown in Table 9 below, reveals that the new system of learning process post covid 19 have definitely resulted in depression among the students of the HEIs. This is evident from the highly significant p value at 1% level which rejects the null hypothesis that the new system of learning has not resulted in to depression among students of HEIs.

H₀₇: Fit is good or the students of HEIs are not facing depression due to the new system of learning.

H₁₇: Fit is not good or the students of HEIs are facing depression due to the new system of learning.

	Depression
Chi-Square(a)	101.000
df	4
Asymp. Sig.	.000*

Table 9: Results of Chi- Square Tests

Source: Author's Compilation using SPSS

[* significant at 1% level]

[** significant at 5% level]

[*** significant at 10% level]

VII. CONCLUSION AND RECOMMENDATIONS

The outbreak of this pandemic challenged the education system drastically not only in India but also across the world as a result of which the educators were bound to shift to an online mode of teaching overnight.

In this study, the main objective is to identify what are the major impacts on the HEIs of India in this changing scenario post Covid 19. Teaching – learning process becomes effective only

when the students irrespective of the type of institution equally participate in this process. Significant p value(0.014) clearly depicts that the type of the institution and the attendance percentage of students have significant association at 5% level .Educators of private institutions have reported much more % increase in the student's attendance in the online mode than the governmental institutions as compared to the offline mode prevalent before. This may be due to the lack of adequate infrastructure available to the

students who mainly stay at remote areas or could not afford such technology. This is also a major challenge for both the students as well as the teachers.

Survey analysis showed that arranging online classes as well as coping with this new teaching – learning process has resulted in extra burden and stress to the teachers as is clearly visible from the significant p value (0.000) which rejects the null hypothesis of no extra burden at 1% level of significance. Despite extra burden, there has been instances of criticism being faced by the teachers, the test results clearly reveals that the Gender of the teacher and the level of criticism faced by them from their students are significantly associated at 10% level of significance. More specifically female educators have reported much more case of criticism as compared to male educators. Another major challenge faced by the educators i.e. mainly those who are appointed as visiting faculties or on contractual basis was that they were not being paid the same salary as before the pandemic for continuing such smooth flow of teaching –learning process. This is evident from the significant p value (0.000) which rejects the null hypothesis of no change in salary of the educators at 99% confidence interval and inspite of this the teachers are continuing their work for the sake of the students future. However, a major challenge before the students as well as the teachers due this shift from the offline mode to this online mode is lack of interaction between the teacher and the students. This is evident from the significant p value (0.076) at 10% level which reveals that that there has been significant association between the mode of class and the lacking in the teacher student's interaction. Another factor which acted as a barrier to smooth flow of teaching – learning process was the technical issues attached to such online mode of classes. Statistically significant Pearson Chi-Square test results at 1% level, revealed that there is a strong association between the technical issues attached while conducting online classes and the level of extra burden being faced by the educators for arranging such classes. Finally despite all such challenges, one of the major challenge is that such online version of classes have become a reason for depression to most of the students mainly because all of them do not have the same capability to adapt such new technology suddenly, they are unable to understand

their lessons through such mode, they cannot pay same level of attention as in class room teaching environment, they might not have accessibility or the capacity to afford such infrastructural facility to continue their learning and may also be due to the uncertainty about their future life. Hence, it may be concluded that this new normal situation has challenged both the educators as well as the students, human being by its nature takes some time to adjust to anything new coming up in this environment. On the brighter side more number of students are also attending the classes with some exceptions. So, this crisis will also be overcome by all the students as well as teachers which will definitely bring new hope for their future endeavors.

REFERENCES

- [1]. Dhawan, S. (2020). "Online Learning: A Panacea in the Time of COVID-19 Crisis". *Journal of Educational Technology Systems*, Vol. 0(0), Pp. 1-18.
- [2]. Gond, R. and Gupta, R. (2017). "A Study on Digital Education in India: Scope and Challenges of an Indian Society". *Anveshana's International Journal Of Research In Regional Studies, Law, Social Sciences, Journalism And Management Practices*, Vol.2, Issue.3, Pp. 12-18.
- [3]. Mahajan, M, V. and Kalpana. R. (2018). "A study of students' perception about e-learning". *Indian Journal of Clinical Anatomy and Physiology*, Vol. 5(4), Pp. 501-507.
- [4]. Singh, G. (2016). "Challenges for Teachers in the Era of E-learning in India". *Scholedge International Journal of Multidisciplinary & Allied Studies*, Vol. 03, Issue. 02, Pp. 14-18.
- [5]. Trakru, M. and Jha, T, K. (2019). "E-Learning Effectiveness in Higher Education". *International Research Journal of Engineering and Technology (IRJET)*, Vol. 06, Issue. 05, Pp. 96-101.
- [6]. Martin, A. (2020). How to optimize online learning in the age of coronavirus (COVID-19): A 5-point guide for educators. https://www.researchgate.net/publication/339944395_How_to_Optimize_Online_Learning_in_the_Age_of_Coronavirus_COVID-19_A_5-Point_Guide_for_Educators.