

## “Online Education in India: Challenges and Opportunities in light of Covid-19”

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**ABSTRACT:** Education is fundamental for the economic development of any country. It plays a very crucial role in the economic and social progress of a country. It promotes the productivity and creativity of human capital and paves the way for entrepreneurship and technological development. Countries which have leveraged human capital to optimize the use of physical capital have achieved faster growth. Thus, investment in education or human capital is significant for the process of economic development. Education is one among the hardest hit sectors in the current COVID-19 scenario. Since March 22nd 2020 when lock down was announced for the entire country educational institutions all over the country have been closed. Though the economy is moving to the unlock mode gradually, with the pandemic showing no signs of decline the situation has become a challenge to educators and students alike. The spread of Covid-19 worldwide has thrown the world into an educational crisis. Emerging economies like India are facing the problem all the more in the absence of strong digital infrastructure. The impact of Covid-19 on Education in India has been discussed in the light of Challenges and Opportunities to students, teachers, educational institutions and universities.

**Key words:** Covid 19, online education, human capital, students

### I. INTRODUCTION

The year 2020 started with an ominous note with the outbreak of pneumonia that was first discovered in the city of China. The disease spread across the world and has been declared as pandemic by World Health Organisation on 30th of January 2020. The pandemic impacted every sector of the society viz. Trade, education, shipping, automobile, etc., Government of India ordered total closure of Organisations and educational institutions alike to contain the virus w.e.f 15<sup>th</sup> of March, 2020. The closure of educational institutions leads the students and their

parents into a state of perplexity impacting the final assessments. The student evaluation and student safety becoming two important points of consideration. In order to ensure student safety and uninterrupted education, Institutions opted for online teaching using various platforms available such as Zoom, Microsoft teams, WebEx, Google class room, etc., Online education although existed since 2014, however became prominent and the only mode of delivering education after the aftermath of Covid 19.

India being a developing country has seen the modern technology being confined to urban and metropolitan areas. The rural India still under the grip of poverty lacks the much needed digital platform for the continuation of education. However, every challenge brings with it an opportunity to change the status quo and make the difference. This paper makes an effort to study the challenges and opportunities faced by the student community from primary to post doctoral level, teaching fraternity and the parents alike.

### II. OBJECTIVES OF THE STUDY

- 1) To understand the opportunities and challenges of Online education in India from perspective of Students, Teachers and Parents.
- 2) To compare Online education and Traditional education
- 3) To understand the satisfaction level of the students attending Online classes.
- 4) To analyse the effectiveness of Online education in India
- 5) To study the impact of Covid-19 on educational sector.

### III. RESEARCH METHODOLOGY

A] Research design

The research design opted for the current study is blend of exploratory, as well as descriptive. The blended design is opted to understand, discover

, analyse and evaluate the opportunities and challenges of online education

B] Research cycle

The research is carried out in a continuous and recurring cycle. the research process goes in this pattern explore > generate > evaluate

C ] Design of the sample

The study goes with a random sampling across the county. The google form is circulated to students and faculties throughout the country almost reaching 20 different states . All the respondents are from 20 different states and four union territories

D] Size of the sample

The research has been conducted using various research tools such as questionnaire , the questionnaire is sent to 383 students for which 140 students of different age groups, responded and 50 teaching staff.

#### IV. DATA COLLECTION

The data collection is a very curtail step in any research. The current paper uses both the primary as well as secondary data. The primary data is been collected by survey. whereas the secondary data is collected from. Various books , articles and research and review papers as well as media reports .

The well designed questionnaire that contains 30 questions has been used for the survey and the survey has been take place on the digital platform using Google forms. Students were divided into three groups SG-1 ( class three to seven), SG-2 ( class eight to twelve) and SG-3 ( undergraduates, postgraduate students) and fifty faculty members responded to the survey.

#### V. REVIEW OF LITERATURE

Almost all State Government's have taken measures to make sure that the educational activities of schools and colleges don't hamper during the lockdown period with the instructions to shift to online teaching from regular one. The lockdown has accelerated adoption of digital technology, providing an opportunity to develop new and improved professional skills/knowledge through online learning.

Online learning has successfully bridged the gap and filled the void in the absence of traditional mode of teaching during this pandemic Covid-19 situation (Pravat, 2020). Use of learning management systems by educational institutions became an excellent demand. It opened a good opportunity for the businesses those are developing and strengthening learning management systems to be used educational institutions (Misra, 2020).

#### Overview of Student Engagement and Methodology

Student engagement has been described as the feeling of belongingness, attachment and enjoyment a student experiences while he is enrolled in a course offered by an educational institution (Fredrick setal., 2011).With increased student engagement in higher education increases the employment prospects that in the longr un impacts the entire nationandal so the reputation of the institution.

Researchers over the years have struggled to design a valid and reliable scale for measuring student engagement. Although researchers converge on the notion that the concept of student engagement is multifaceted but they divergere mark ably on the nomenclature of those dimensions. As has been put forward by researchers, student engagement could be seen as a conglomeration of five facets-(a) academic engagement(b) cognitive engagement(c)social engagement with peers(d) social engagement with peers and(e) affective engagement.The Higher Education Student Engagement Scale (HESES) has been able to successfully captureall the five aspects (Zhoc, Webster, King, Li,& Chung,2019).

(a) Academic engagement indicates the behaviour required for a student to attain a minimal level of knowledge. It include both the facets of academic learning and online engagement (Zhoc, Webster, King, Li, & Chung, 2019).While academic learning in vestigates whether a student comesprepared to class, his attendance and if he is showing effort in studies; online engagement brings up the dependence of learning on the information technology(Zhoc,Webster,King,Li,&Chung,2019 ).

(b) Cognitive Engagement allows students to move beyond the smaller boundaries of monotonous learning and crave for challenges that form meaningful and enduring commitments tostudy (Zhoc, Webster, King, Li, & Chung, 2019).The discussion here is on psychological investment of students in compre hending, learning as well as mastering the course contentat alevelthat is more than the thres hold level of understanding.

(c) Social Engagement with peers captures both the dimensions of peer engagement as also the beyond-class engagement.While peer engagement brings up the level of collaboration among peers for knowledge creation and learning, beyond class engage mental lows student to be socially more active and connected(Zhoc, Webster, King, Li, & Chung,2019).

(d) Social Engagement with Teachers which

indicates the level of productive interaction a student has with a faculty in an academics sphere (Zhoc, Webster, King, Li, & Chung, 2019). Such interactions are absolutely essential to keep a student engaged and bring out the best potential that a student might possess. When teaching staffs are supportive and encourage discussions on a broad range of topics, it enhances a student's connect to the institution as also improves the perception towards the environment of the campus. This besides increasing student's educational aspirations of facilitate the personal as well as intellectual growth of student

- (e) Affective Engagement unfolds the level of emotional connectivity of a learner to a place and a set of activities she feels is worth pursuing (Zhoc, Webster, King, Li, & Chung, 2019). It creates a sense of belongingness, identification with an institution and also a sense of relatedness which shapes a student's participatory behaviour and crafts a higher level of motivation (Zhoc, Webster, King, Li, & Chung, 2019).

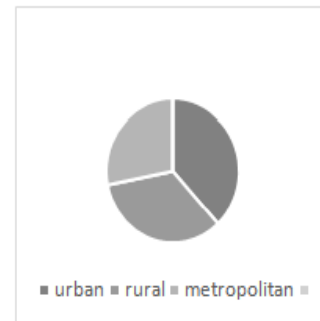
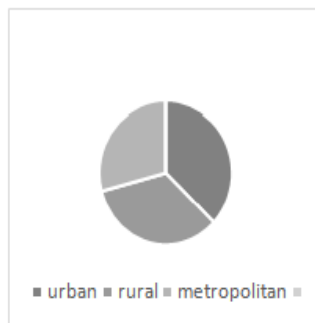
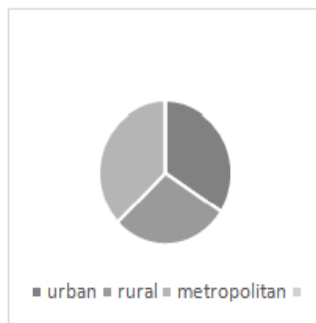
### VI. RESULTS AND ANALYSIS

The following table give the demographics of students who have been part of the survey.

**Table- 1**

S.N o.	Description	Characteristics	Percentage
1	Gender	Male	49
		Female	51
2	Student	Class 3-7	28

#### Mode of technology



The above pie diagrams represent the place of residence of the respondents with respect to the groups that have been divided upon their academic level. The students of group SG-1 are mostly from the urban and metropolitan areas. Twenty nine percent of respondents are from the rural area . in the group SG-2 most there is

#### Place of residence

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#### Awareness of covid -19 and usage of Arogya sethu app

Among the total respondents 96.2 percent of the people are aware of the covid-19 pandemic and taking the necessary precautions such as wearing the masks , frequently washing their hands with soap or hand sanitizer with 70% alcohol content and strictly following the social distance . the whole 96.2 percent of users are using the Arogya sethu app , has undergone self-assessment test and keeping a continue track on it . this is a good sign that everyone are taking care of them self's and thereby the society .

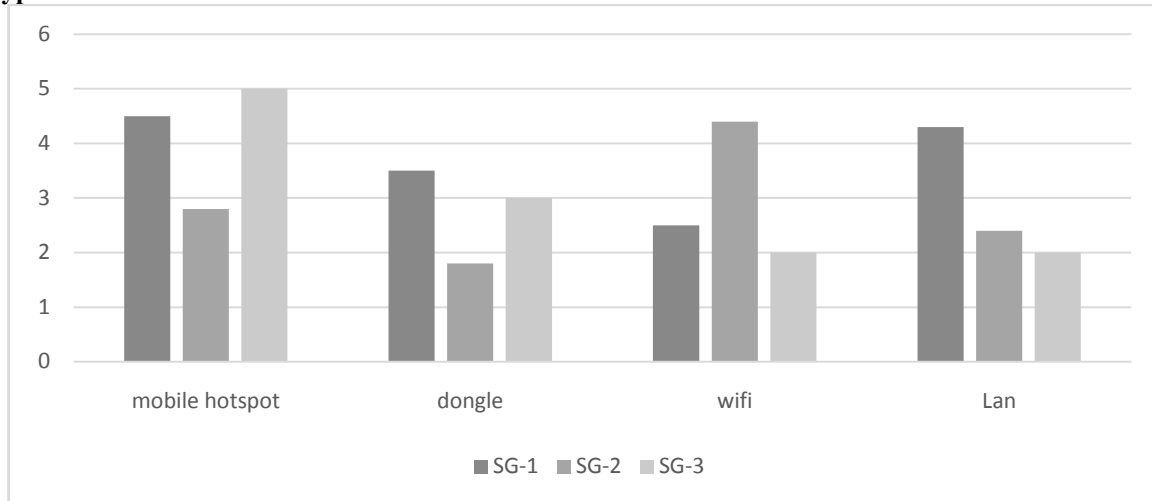
almost equal diversity and the maximum from the urban area and the minimum from the metropolitan area. When we look at SG-3 group thirty eight percent of the respondents are from urban areas , thirty four from the rural areas and twenty eight percent from the metropolitan cities .

### Use of Online Education

Among the total respondents 78.8 percent of the respondents stated of experiencing Online education for first time only after the pandemic.

However, 21.2 percent respondents stated being familiar with the online education previous to the pandemic situation.

### Type of internet connection



The figure shows that mobile hotspot is the most preferred mode of internet connection among the students followed by LAN and Wi-Fi.

### Opting for Online education

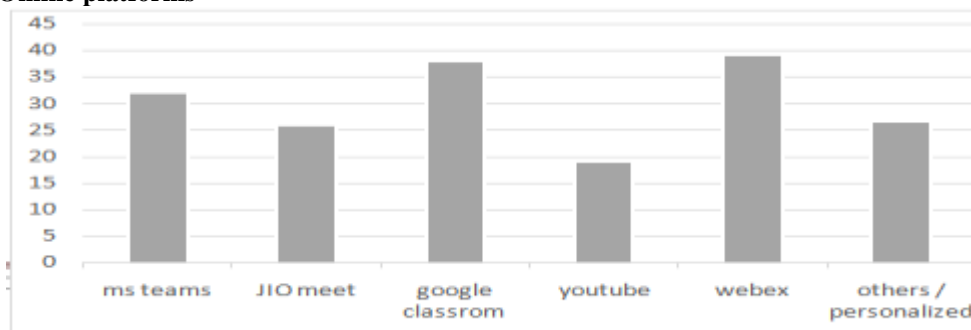
When respondents were asked the commencement of regular online classes by their respective educational institution, 89 percent responded as yes and 11 percent responded that the institutions are working on it and will go on floor soon.

### Average time spent on Online sessions

The survey found SG-1 students average time spent for online session is between 1 hour to 2.5 hours daily, SG-2 from 2 hours to 3.5 hours daily and SG-3 between 4 to 6 hours per day.

Students interesting in additional learning have also reported to spend more than 6 hours per day.

### Usage of Online platforms



The survey showed that WebEx the leading and most popular platform for online education followed by the Google classroom and MS teams. Jio meet and YouTube also being preferred by a significant number of students. Woziq and Rioplayer were used by 26.7 percent of students.

### Role of Universities in the Post Pandemic Education System

Universities are now seen as national assets, sources of knowledge and innovative thinking, and play a major role in addressing policy priorities. They not only regulate the functioning of affiliated institutions but are academic leaders and

facilitators. The challenges before Universities are firstly to initiate the necessary changes in education policy to suit the new normal. Redesigning of the syllabus and curriculum and making changes in examination policy and procedures to address the special needs of the changed environment has become the matter of utmost priority. Social distancing has made it imperative to adopt technologies like Artificial intelligence for conducting exams as student evaluation is an integral part of any education system. Making changes in criteria for selection and recruitment of teachers may be required to incorporate the additional knowledge and skill sets required for teachers. Developing programmes on par with

world class universities to be initiated to take a giant leap from local to global.

**The opportunities unlocked for universities are:** global recognition, students from a pool of diverse talents, innovative programmes, dual degree programmes, short duration micro level courses, skill oriented courses with flexible timing to attract students from global arena.

Introduction of new examination practices for continuous evaluation as against the traditional mode of one time exam model.

**Faculties**

The descriptive data of teachers participating in the survey.

**Table: 2**

SNO	Particulars	Characteristics	Percentage
1	Gender	Male	39
		Female	61
2	Level being taught	Class 3-7	28
		Class 8-12	32
		>Class 12	40

Table 3 shows that 46 percentage of the faculties responded in affirmative to the need of special training to be provided for the use of Online teaching mode, 45 percent responded against the idea, while 9 percent were unsure about it. However, the fact cannot be denied that this new mode of teaching was new to all of them.

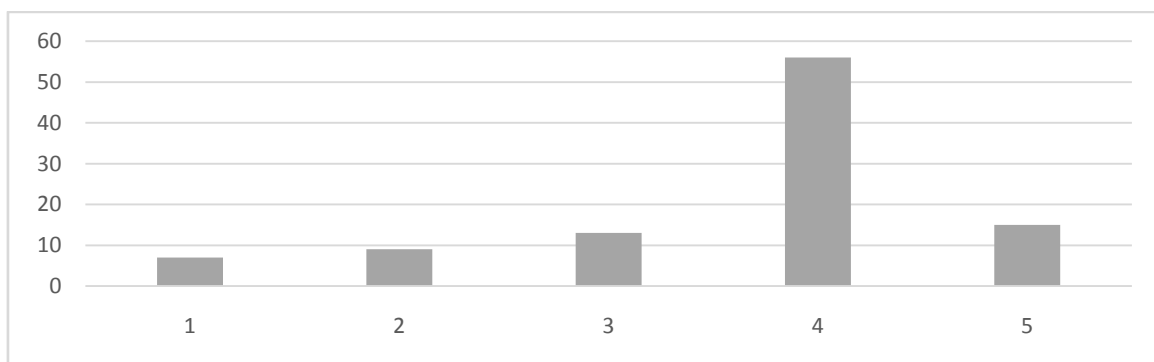
**Sharing of notes on daily basis**

Faculties were asked to rate whether they able to share notes on a daily basis on 5 point Likert scales starting from 1 to 5 strongly disagree, disagree, neutral, agree and strongly agree. With (56%) of faculty are agreeing that they able to deliver the contents conveniently, (15%) are strongly agreeing to it. (13%) are neutral. (9%) disagree that they are not able to share the notes on daily basis and (7%) strongly disagree to it

**Need for Special training**

SNO	particulars	description	Percentage
1	Need for special training	Yes	46
		No	45
		unsure	09

**Table -3**



**Time spent on Class Preparation**

Face to face interaction is the major difficulty facing by many faculties during online lectures as they not able to know whether students have understood the lecture or not? So (52%) have agreed that they spend more time in preparing and imparting the lectures, so that they can understand

the concepts well. (19%) strongly agreeing to it (15%) are neutral, (8%) disagree (6%) strongly disagree

**Student's response during Online sessions**

Online teaching has made education reach remote areas where the faculties were

present.(50%) of Faculties have agreed that their contents are delivered in remote areas. Only (13%) strongly agreed to this statement which states that they able to deliver the contents without any difficulties. (13%) disagree to this statement. (15%) are neutral and 9% strongly disagree. Nearly (14%) of students complain of low connectivity in their areas the following table depicts this data

SNO	particulars	characteristics	percentage
1	Students response in online sessions	Strongly agree	13
		Agree	50
		neutral	15
		disagree	13
		Strongly disagree	09

**Table -4**

**Reaching every student irrespective of their area**

However, the picture in India would be staggering enough. There are thousands of interior villages without any internet connection or even smartphones. There is a great digital divide between urban and rural students. This will lead to increased rates of dropouts among these poor children.

**Satisfaction of Online Sessions**

SNO	particulars	characteristics	percentage
1	Satisfaction of teaching in online sessions	Strongly agree	13
		Agree	30
		neutral	16
		disagree	18
		Strongly disagree	34

**Table -5**

Online mode of education satisfaction was rated on 5 point Likert scale from strongly disagree to strongly agree. (34%)strongly disagree to the statement that they are satisfied and able to control the class in the same way as they use to do before Covid 19 in offline class. (30%) agree to it. (13%) of them are strongly agree, (16%) are neutral.

(18%) of them disagree to this statement. It states that most of the faculties are comfortable in offline mode of education as they find convenient

**Online classes after lockdown**

Most of the faculties don't want to take class online because it's causing them difficulty in imparting lectures. (38%)of the faculties are strongly disagree and want regular (traditional) mode of teaching, (16%) disagree to the online mode of teaching, (16%) are neutral and (16%) agree to the statement and(14%) strongly agree to it and want online mode of teaching

SNO	particulars	characteristics	percentage
1	Online classes after lockdown	Strongly agree	14
		Agree	16
		neutral	16
		disagree	16
		Strongly disagree	38

**Table -6**

**Issues in Online Teaching and Learning**

The current paper analyses issues of online teaching and learning which are listed below

- Knowhow of usage of Digital platform: Learners should possess certain amount of proficiency in usage of technology to attend the class like successfully join the class, attend the class, submit the assignments and other works, interact with peers and the instructor . Learners should be well versed with netiquettes of online learning environment to make online learning fruitful.
- Practical concern: No learner can really take advantage of online classes until and unless there is a sound and strong technical support through the internet connectivity. The connection should have high bandwidth to quickly connect and participate in the class.
- Drive : Online learning requires motivation to complete tasks, stay engaged and make progress. Some online learners start with a bash and slowly their engagement levels dawns. Practising positive talk, learning schedule time and log in everyday to interact with instructors and peers keeps the spirit high for online learning

**VII. HYPOTHETICAL TESTING**

**Table 7 Mean Scores of Dimensions of Student Engagement**

Dimensions of Student Engagement		Pre COVID-19				Post COVID-19			
		Mean	N	Std. Deviation	Std. Error Mean	Mean	N	Std. Deviation	Std. Error Mean
Academic Engagement	Academic Learning	3.8571	70	.76917	.09193	3.4214	70	1.10298	.13183
	Online Engagement	4.0857	70	.50340	.06017	3.9857	70	.91474	.10933
Cognitive Engagement	Cognitive Engagement	3.7786	70	.61612	.07364	3.1786	70	1.05393	.12597
Social Engagement	With Teachers	3.7714	70	.86261	.10310	3.3429	70	1.09028	.13031
	With Peers	4.0000	70	.60193	.07194	3.1214	70	.91756	.10967
	Beyond Class	4.2071	70	.57887	.06919	3.2000	70	1.01938	.12184
Affective Engagement	Affective Engagement	4.2429	70	.55327	.06613	3.5786	70	1.01219	.12098

Source: Primary Data

From the above it is revealed that the mean scores of all the dimensions of student engagement in new system online education and learning during the post COVID-19 period has changed as compared to the traditional system of education in the pre COVID-19 outbreak. In order to test the significance of the difference in the mean scores of the

dimensions of student engagement pre and post COVID-19 outbreak

**Student Learning Outcome**

The mean scores of the student learning outcomes are comprised into cognitive, social and self-growth learning outcomes before and after the outbreak of COVID-19 p and emicareas follows:

**Table 8 Mean Scores Student Learning Outcomes**

Student Learning Outcome	Pre COVID-19				Post COVID-19			
	Mean	N	Std. Deviation	Std. Error Mean	Mean	N	Std. Deviation	Std. Error Mean
Cognitive Outcome	4.0743	70	.51208	.06121	3.2343	70	.96607	.11547
Social Outcome	4.2800	70	.54947	.06567	2.9029	70	.97905	.11702
Self-Growth Outcome	3.9714	70	.60556	.07238	3.4000	70	.97743	.11682

Source: Primary Data

Table 8 reveals that the mean scores of three dimensions of student learning outcomes in new system online teaching and learning during the post COVID-19 period has changed in relation to the traditional system of education during the period of pre COVID-19 outbreak. In order to test the

significance of the difference in the mean scores of the dimensions of student learning outcomes during pre and post COVID-19 outbreak, a paired ttest is carried out. The results of the paired ttest is as follows:

**Table 9 Paired Sample Test**

Student Learning Outcome	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2 tailed)
				Lower	Upper			
Cognitive Outcome	.84000	1.06246	.12699	.58667	1.09333	6.615	69	.000*
Social Outcome	1.37714	1.21228	.14489	1.08809	1.66620	9.504	69	.000*
Self Growth Outcome	.57143	1.06065	.12677	.31853	.82433	4.508	69	.000*

Source: Computed Figures

**\* Significant at 5% level of significance**

The hypotheses on the dimensions of student learning outcomes and the interpretation of the results obtained is as described below:

**Hypothesis 1**

**H<sub>0</sub>**: There is no significant difference in Cognitive Learning Outcome of students in higher education before and after COVID-19 pandemic outbreak.

**H<sub>1</sub>**: There is significant difference in Cognitive Learning Outcome of students in higher education before and after COVID-19 pandemic outbreak.

Table 8 reflects the comparison of the mean scores of cognitive learning outcome of students in higher education, exposed ostensive change in the scores before and after the outbreak of COVID-19. The mean scores has declined from 4.0743 in the period prior to the outbreak of COVID-19 pandemic to 3.2343 in the period ensuing the outbreak of COVID-19 pandemic.

The observed difference is found to be statistically significant at five percent level of significance as the p value (0.000) is less than the 0.05 (Table 9), thus rejecting the null hypothesis. There is a significant difference in cognitive learning outcome of students in higher education during the pre and post COVID-19 outbreak. The mean cognitive learning outcome of students in higher education has come down considerably with the change experienced in teaching and learning consequent to the outbreak of COVID-19.

**Hypothesis 2**

**H<sub>0</sub>**: There is no significant difference in Social Learning Outcome of students in higher education before and after COVID-19 pandemic outbreak.

**H<sub>1</sub>**: There is significant difference in Social Learning Outcome of students in higher education before and after COVID-19 pandemic outbreak.

According to the Table 8, the mean scores of social learning outcome of students in higher education before the outbreak of the pandemic (4.2800) and after the outbreak of the pandemic (2.9029)

shows a marked difference as shown in Table 3. The results of the paired t-test revealed that the difference in social learning outcome of students in higher education before and after COVID-19 outbreak is statistically significant as the p value (0.000) at five percent level of significance is less than 0.05 (Table 9) and the null hypothesis is rejected. It can be inferred that the students in higher education experienced a decline in their social learning outcome with the change in the methods of learning and teaching in the post COVID-19.

**Hypothesis 3**

**H<sub>0</sub>**: There is no significant difference in Self Growth Learning Outcome of students in higher education before and after COVID-19 pandemic outbreak.

**H<sub>1</sub>**: There is significant difference in Self Growth Learning Outcome of students in higher education before and after COVID-19 pandemic outbreak.

The mean scores of self-growth learning outcome of students in higher education prior to the outbreak of the pandemic (3.9714) and after the outbreak of the pandemic (3.4000) show an apparent difference (Table 8). On testing the significance of this difference it is found that the difference in the self-growth learning outcome pre and post COVID-19 outbreak is statistically significant as the p value (0.000) at five percent level of significance is less than 0.05 (Table 9) and there by rejecting the null hypothesis. It is revealed that the students in higher education experienced a decline in their self-growth learning outcome as the methods of learning and teaching changed post COVID-19 pandemic outbreak.

**VIII. CONCLUSION**

Education being at cross junction in India. Uncertainty looms so large that it has rendered impossible to implement long term changes. The questions uppermost in the minds of all stakeholders is "How long will this new normal continue". "How soon would we be able to go back to the old normal"? "Are investments and efforts



need to be made to embrace this new normal ? At this point of time nobody seems to have the answers for these questions. So do we prepare ourselves for a short term or long term changes? The answer would be to prepare for the short term with the ability to extrapolate for a longer term. Hence

- Innovative education delivery methods
- Freely accessible digital infrastructure across the length and breadth of the country
- Effective Virtual Classes.
- Innovative methods of class control.
- Suitable assessment methods
- Innovative courses and e-content
- Developing entrepreneurship
- Developing Bio Safe and low human contact campuses

In short the flexibility to move from physical to digital and back again from digital to physical must be developed in all the stakeholders of our education system If Universities become the leaders, Institutions facilitators, Teachers innovative and Students more responsible education in India would emerge victorious.

#### IX. LIMITATIONS OF THE STUDY

The topic of the study is great depth and is the matter of a country's bearing.

The submitting candidate has put in the best efforts to accumulate, evaluate and illustrate the data collected from various sources. However inaccuracies and obstacles are inevitable. This paper has the following limitations:

- A] It accounts for only a short span of time
- B] Few conclusions are procured from opinionated editorials.

#### X. SCOPE FOR FURTHER RESEARCH

It is considered as education has no boundaries, day by day there is being a great changes in the science and technology in this world . There is a huge scope for further research in the field of online education in perspective of India. Scope of Online Education is widening since more and more universities are offering distance courses on each and every subject you want to pursue. The covid 19 has teaches us many things, mainly the remote working. A new and innovative ways can be discovered for the new normal.

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