Covid-19 and Dynamic Changes in Learning Environment: A Perceptional Study

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Abstract

De-addiction of mobile in students has become a challenge for both urban and rural parents. Students were forced to use mobile handsets and in-spite of the hybrid learning mode adopted and adapted by schools and colleges; due to Covid and its challenges. Covid has made things clearer to learn by distance and maintain the social distance. India is full of villages and most parents are unaware of what students are watching on their mobile. Children and students camouflage their parents by projecting as attending an online class. This has become a challenge to de-addict and bring them back to normal learning. The present study intends to analyses the dynamic changes in the learning environment during pre and post Covid learning environment. The outcome of the study indicated that the that there is significant difference in the learning environment and it also revealed that after covid the learning environment became unfavourable.

Introduction

Gone are the days when mobiles when mobiles were a taboo on campuses. The class room went inside the mobile due to the pandemic. The lockdown was the result of the pandemic and pandemic created a new dimension of learning more for students across the nation. Students and teachers evolved themselves from the clutches of challenges of not being able to be in touch or in contact due to social distancing as it was unavoidable. Necessity is the mother of all inventions and people started getting in touch with students via various apps like Zoom, Teachmint, Google meet etc. Parents were forced to buy a smart phone to their children in spite of their incomes being a challenge due to the lock down.

Table No.1 The learning and Development concepts globally an overview

Slno.	Academic systems or Methodologies	Organization names or Individuals Name	Ageing and existence	Pre COVID	Post COVID
1	Blooms Taxonomy	Benjamin Bloom	Since 1956	Practiced	Practiced and Existing
2	Convent Education System		(c-500 to 1000 years)	Existed	Existing
3	Jeusit educational systems	St. Aloysius College, St. Josesph College	460 Years	Existed	Thriving
4	Madrasa system	Iran	800 years	Existed	Evolving
5	Gurukula system	Disappeared after 1835 after Lord Macaulay	15000 Years	Strangled and had to vanish	No change
6	Mari Montessori system	1929, Maria Montesoori System	60 years	Existed	Practiced and Existing
7	Martial Arts	Kalyapattu,	1500 years	Existed	Thriving
8	Music and Dance	Bhartanaya, Kathakali	3000 years	Existed	Exisitng
9	Vishwavidhyala	Indian System of Education	2500 Years	Not Existed	Not Existing
10	University Schools and colleges-Colonial Systems	Regular Universities	150 years	Existed	Thriving
11	Skill development schools	Government sponsored Instituetes	100	Existed	Thriving
12	Vocational training institutes	NGO's Sponsored, Foreign Sponsored	75 year (Industrial Training Institute)	Existed	Thriving
13	Edu Tech Applications	Neo Education	15–20 years.	Existed	Thrived
14	National Open school	Central Government Institutes	30 years	Existed	Existing
15	Night school	For children who were/are destitute	75 Years, Mumbai	Existed	Strangled

Source: Authors

Slno.	Academic systems or Methodologies	Organization names or Individuals Name	Ageing and existence	Pre COVID	Post COVID
16	Evening Colleges	For Executives	40 Years	Existed	Strangled
17	Executive education	For working professionals	40 years	Existed	Improved a lot
18	Dharmashala and Dharma chatras	Buddhism, Jainism system of education	2500 years Plus	Existed	Existing
19	Nath Pankth System of Vedic education	Hindu System of Education of Vedas	5000 years	Existed	Existing
20	Research Centers	Government of India Sponsored	75 years	Existed	Thrived
21	Individual Think tank organizations	NGO's	75 years	Existed	Ganered more people
22	Auyurvedic Traditional schools	Auyurvedic colleges	75 years	Existed	Thrived
23	Yoga Schools	Yoga schools and Hindu Philosophy	2500 years	Existed	Thrived
24	Upanishads	Advaita Vedanta	5000 years	Existed	On line slokas and coaching
25	Sutras	Buddhism	2500 years	Existed	Thrived
26	Paid Tech Education Apps	Baijus, Vedanta	10 years	Not Much	Thrived extremely well
27	Massive open on-line Courses	Universities	10 years	Thrived	Thrived very well
Source: Authors					

What happened is a new revolution. Birth of on-line education platforms like Biju's or Vedantu, or Scholarly and many more across the world; a new dimension to conduct meetings through Google meet, zoom meet, or Microsoft Teams. This platform has reduced the cost of travel for students as well as teachers. Teachers could conduct meetings of the course to be taught and Students could attend the classes as per their convenience. Students today have an access to study and get connected online in by staying in the comfort zone of their homes. The usage of mobile has increased and hence the time spent for both useful and non-useful viewing has also increased causing a new kind of addiction. This addiction eats of the time and energy of students and children. Hence the need arises to understand students, parents and teachers in general their usage.

Literature Review

Objectives

The following are the objectives of understanding students, parents, people in general who are connected either as a parent or a vendor to the teaching and learning industry.

- To know the parents' perception on changes in the learning behavior during Covid pandemic period.
- To evaluate the perceptional changes in the learning environment before and after covid period.

Indeed, the objectives framed are measurable and quantifiable. This helps us to understand and modify the habits of students in a better manner, hence the bigger picture of understanding and finding a solution to this addiction of mobile handsets is the bigger requirement. This requirement has been considered as the overall agenda to understand what can be done to prevent students from not getting engaged for long period of times, therefore the following research agenda has been written down to work up on.

Research Design

The present study is mixed method of quantitative and qualitative research. This mixed method is most appropriate to the studies which are based on both primary and secondary data is indicated by Sanjaya, and Pradeep (2022).

Data collection procedure

The present study is based on both primary and secondary data. The primary data was gathered with the help of structured questionnaire which was constructed based on the detailed study of earlier literatures, blogs, news articles, government reports and so on. The structured questionnaire was circulated through google forms and also manually to parents. Parents both in the urban and rural areas were identified and questioned. This gives us a blend of parental mind set in terms of the location. Parents who are educated and who are not educated especially in terms of usage of smart phones have also been engaged to answer the questionnaire. The sample size was 150 and out of which many parents had to be assisted while answering few questions which they felt had ambiguity. Mangalore city and outskirts were survey for the same. Parents whose children were studying in Government establishments were also surveyed.

The method used is by asking questions to parents who have their children studying in schools and colleges. A questionnaire was designed to probes parents in an in-depth manner to understand the challenges that they face. This was circulated to 150 parents whose children are currently either in schools or colleges. Understanding teaching and learning efficiency through a conceptual model will ease the process, hence the model has been generated for having an in-depth study. Out of distributed questionnaires 143 filled questionnaires were received. Further, our of received questionnaires 138 were completed questionnaires and all are considered for the further analysis.

Tools used

The collected data was analyzed by employing descriptive statistics, t-test, and paired samples t-test to systematically draw the inference in support to the objective of the study.

Understanding the changes in Learning Environment through a Conceptual Model Pre and Post Covid

The model is designed as a conceptual thought process to understand pre-covid and post covid teaching and learning model. Indeed, faculty would engage the class using traditional methods such a black board, projector, or smart class room. All these were within the four walls of the class room. Students were made to sit for the teacher to engage the class. The learning process would start based on the teaching process. The mediating factors that facilitate the teaching delivery were the tools like black board, projector, and the computer through which the teacher could present the power point presentations. The same is illustrated in the following diagram. The teacher would have a single task as well as the student. Multi-tasking in the class was not allowed by the teacher as it would be considered as distraction. When phones were not allowed pre- covid times a contrasting situation happened post covid that is the class room went in to the mobile. The same is illustrated in another diagram to understand the flow of the topic understudy. Teaching learning model pre and post covid is as illustrated below:

Data Analysis

The primary data collected was analyzed using jamovi statistical software for faster and better understanding. In the first part researcher focused on personal profile of the respondents and in the second part researcher analyzed descriptive result of respondents" perception. In the final part researcher tried to know the difference in the learning environment before and after covid using paired sample t test.

Table 1: Sampling Profile

Variable	Categories	Counts	% Of Total	Total Counts
Age	Less than 40	82	59.4 %	138
	41-50	18	13.0 %	
	51-60	24	17.4 %	
	Above 60	14	10.1 %	
Occupation	Public sector	76	55.1 %	138
	Private sector	38	27.5 %	
	Others	24	17.4 %	
Number of Children at home	One	50	36.2 %	138
	Two	60	43.5 %	
	Three	10	7.2 %	
	None	18	13.0 %	

Table 1 depict the sampling distribution of respondents and it showed 59.4% of the respondents are age group of less than 40 and 17.4% of the respondents are between 51-60 age group. Further, it showed that 55.1% of the respondents are public sector employees and 27.5% of respondents are private sector employees. It also showed the number of children at home and it showed 43.5% of respondents' family have two children and 36.2% of the respondents' family have one child.

Parents' Perspective

Parents are the keen observer of academic changes in their children's academic behavior, therefore researcher asked parents' view on the changes in learning environment during covid pandemic. Table 2 shows the parents' perception on change in learning environment due to Covid-19.

Table 2: Parents' Perspective on Change in Learning Environment due to Covid-19

Variable	Categories	Counts	% Of Total	Total Counts
Did you experience change of instruction to your children by their teachers?	No	16	11.6 %	24
	May be	32	23.2 %	
	Yes	90	65.2 %	
Did you have trouble in delivery of content by teachers to your children	No	46	33.3 %	24
	May be	40	29.0 %	
	Yes	52	37.7 %	
Do you feel COVID 19 brought massive changes and disruptions in the education	No	12	8.7 %	24
	May be	8	5.8 %	
	Yes	118	85.5 %	
Do you feel COVID 19 brought Unique opportunities to teachers and students	No	28	20.3 %	24
	May be	22	15.9 %	
	Yes	88	63.8 %	
The pandemic brought significant changes to mode of education, (Pure on line, off line, Hybrid models of teaching)	No	6	4.3 %	24
	May be	16	11.6 %	
	Yes	116	84.1 %	
Do you feel that COVID 19 has reduced the prominence of traditional model of learning and teaching	No	30	21.7 %	24
	May be	32	23.2 %	
	Yes	76	55.1 %	
Do you feel COVID19 Negatively influenced on students	No	30	21.7	24

and teachers in an education system			%
	May be	32	23.2 %
	Yes	76	55.1 %

The result of Table 2 showed that 65.2% of the parents agreed that they have experienced changes in instruction to their children 37.7% of the parents agreed that difficulty in delivery of content by teachers to their children. And 85.5% of the parents opined that COVID 19 brought Unique opportunities to teachers and students. Further, it revealed that 84.1% of the parents stated that pandemic brought significant changes to mode of education, (Pure on line, off line, Hybrid models of teaching) and 55.1% of the parents agreed that COVID 19 has reduced the prominence of traditional model of learning and teaching. Finally, 55.1% of the parents agreed that COVID19 Negatively influenced on students and teachers in an education system.

Later, researcher tried to know the perceptive changes in learning environment during pre-covid period and post-covid period. The perception collected in five-point Likert scale and it showed that if mean value is less than 2, then it means they strongly disagree on the statement; if mean value between 2.1 to 3, then it means they strongly disagree on the statement; if mean value between 3.1 to 4, then it means they agree on the statement and if mean value above 4, then it means they strongly agree on the statement

Pre- Covid Learning Scenario

Researcher asked the respondents' opinion on learning environment in the pre-covid period and result tabulated in Table 3.

Table 3: Pre-Covid Learning Scenario

	Statistic	df	P	Mean
Pre- covid learning environment was good	44.2	137	< .001	3.64
Traditional model of teaching was prominent during pre-covid environment	39.1	137	< .001	3.54
Use of electronic devices was less used for teaching and learning during pre- covid environment	30.0	137	< .001	3.17
When online education was not in vogue; concentration of students was high	45.4	137	< .001	3.58
The addiction towards palm top/mobile phone devices was less in the pre-covid period	42.4	137	< .001	3.61
The social media usage was less during Pre-COVID period by students	32.0	137	< .001	3.23
The Learning efficiency was high during the pre-covid learning environment	39.3	137	< .001	3.39

Table 3 revealed that respondents agreed that pre-covid learning environment was good (M=3.64) and traditional model of teaching was prominent during pre-covid environment (M=3.54). It also showed that respondents are agreed that use of electronic devices was less used for teaching and learning during pre-covid environment (M=3.17) and they also agreed that online education was not in vogue; concentration of students was high (M=3.58). Further, respondents agreed that the addiction towards palm top/mobile phone devices was less in the pre-covid period (M=3.61) and agreed that the social media usage was less during pre-COVID period by students (M=3.23). Finally, respondents agreed that the Learning efficiency was high during the pre-covid learning environment (M=3.39).

POST-COVID LEARNING SENARIO

Researcher asked the respondents' opinion on learning environment in the post-covid period and result tabulated in Table 3.

Table 4: Post-Covid Learning Scenario

	Statistic	p	Mean
Post covid learning environment is not good	37.5	< .001	3.25
Online and Hybrid model of Education has replaced the traditional model of learning	33.7	< .001	3.10
Adoption of electronic devices for learning gradually increased during post covid environment	40.5	< .001	3.67
Engagement of students in social media has increased the access to other web sites too	25.3	< .001	3.34
Learning efficiency of students and teachers has declined during post covid learning environment	23.2	< .001	2.91

Table 4 revealed that respondents agreed that post covid learning environment is not good (M=3.25) and online and Hybrid model of Education has replaced the traditional model of learning (M=3.10). It also showed that respondents are agreed that Adoption of electronic devices for learning gradually increased during post covid environment (M=3.67) and they also agreed that Engagement of students in social media has increased the access to other web sites too (M=3.34). Finally, respondents disagreed that the Learning efficiency of students and teachers has declined during post covid learning environment (M=2.91).

Learning Environment: Pre and Post Covid-19

The main research question of the study, 'Is there any significant difference in the learning environment before and after covid pandemic?' Therefore, researcher asked their opinion on learning environment before covid period and after covid period. Later, researcher developed hypothesis and tested using paired sample t test.

H_0: There is a significant difference in the perceived Learning Environment Changes before and after the Covid-19

Table 5: Paired Samples T-Test

		statistic	df	p	Effect Size
Pre-covid	Post-Covid	2.74	137	0.007	0.233

Table 6: Descriptive of “Perceived Learning Environment Changes” before and after Covid

	N	Mean	Median	SD	SE
Pre-covid	138	3.45	3.43	0.637	0.0542
Post-Covid	138	3.25	3.40	0.743	0.0633

Table 5 showed the result of paired sample t-test and it showed that there is significant difference in the learning environment before and after covid period ($p<0.01$). It also exhibited the Cohen’s d test for measuring effect size showed that the effect is small because the effect size near to 0.2 standard deviation as per the criteria determined by Cohen (1998) and Navarro (2015). Further, Table 6 showed descriptive result of Perceived Learning Environment Changes” before and after Covid. From the result it showed that learning environment more favourable in the pre-covid (M=3.45) than post covid period (M=3.25). Figure 3 shows the pictorial difference in the mean and median difference of learning environment before and after covid period. From the above result it can reject null hypothesis (Ho) at 1% significance level and it can be concluded that there is significant difference in the learning environment and it also revealed that after covid the learning environment became unfavourable.

Conclusion

The purpose of present study was to analyze the impact of COVID-19 and dynamic changes in the learning environment. It is evidently observed that COVID-19 made the changes in learning pattern where traditional classroom teaching replaced with online and hybrid model of education and which directly caused on the learners to addict with electronic devices like mobile phones and other gadgets. This addiction is not because of involvement of learners for learning but for other purposes such as gaming, watching movies and so on. This negative influence of gadgets on learners changed the learning pattern and learners’ involvement too. The present study recommends that the educational institutes, regulatory authorities, teachers and parents are necessarily needed to give more attention towards de-addicting the students from gadgets so as to enhance their involvement in learning and their overall intellectual development

Declarations

There are no competing interests among authors.

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First author wrote methodology and design, second author wrote discussion section, third and fourth author made data collection and analysis and last author wrote introduction and conclusion part and proof-read.

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Figures

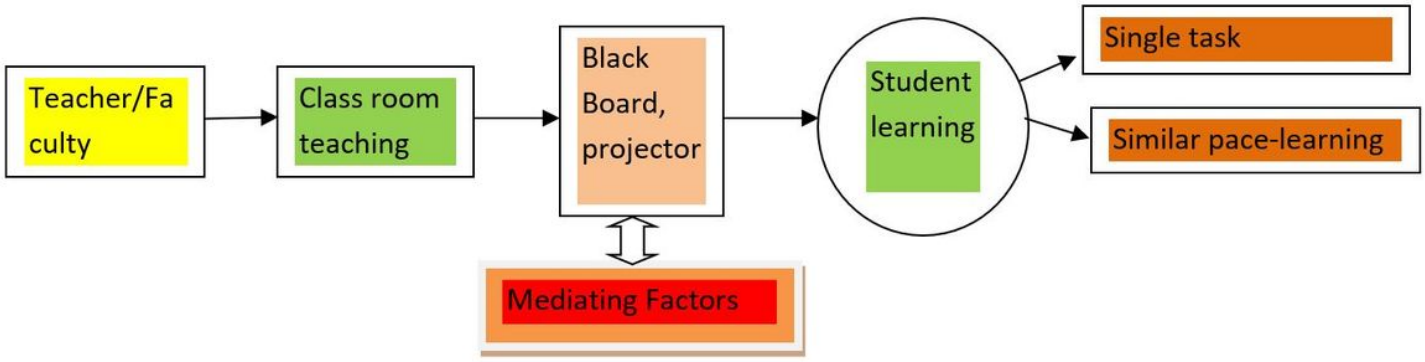

Figure 1

Conceptual Model Pre-Covid Teaching Learning Mode

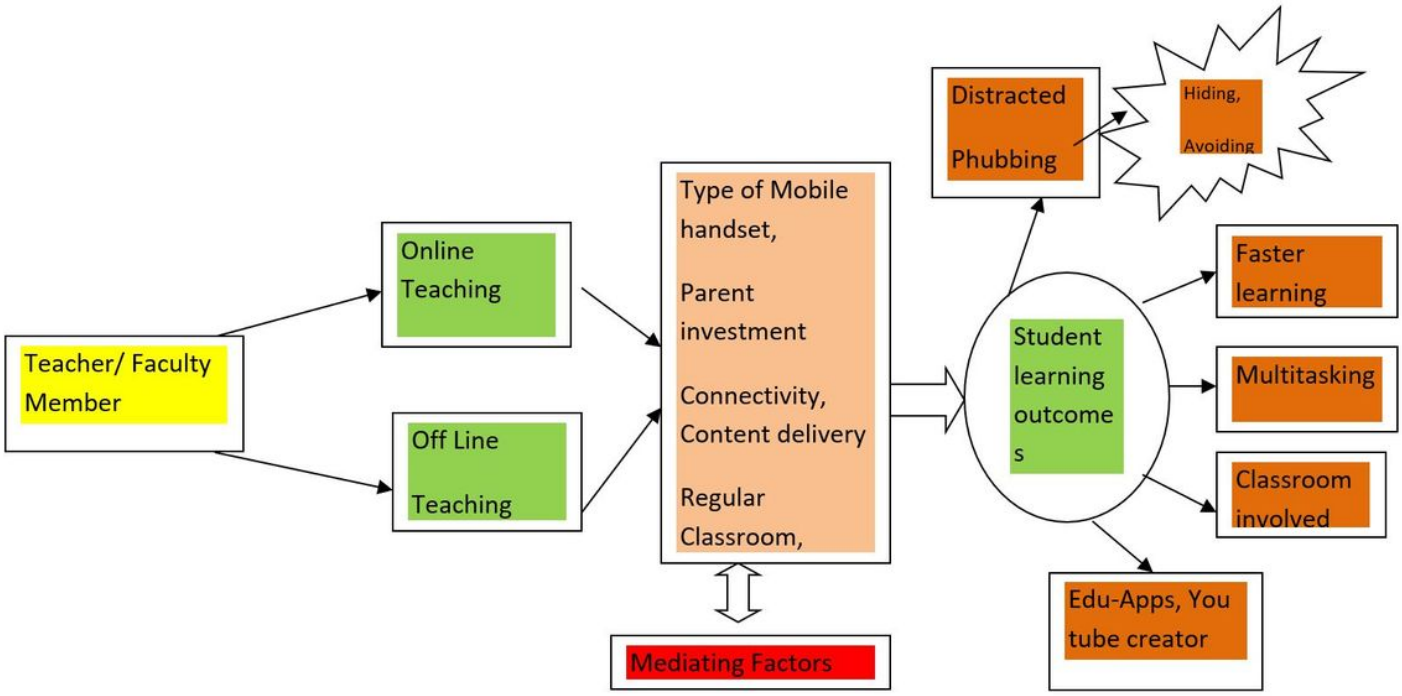

Figure 2

Conceptual Model Post Covid Teaching Learning Mode

Source: Author

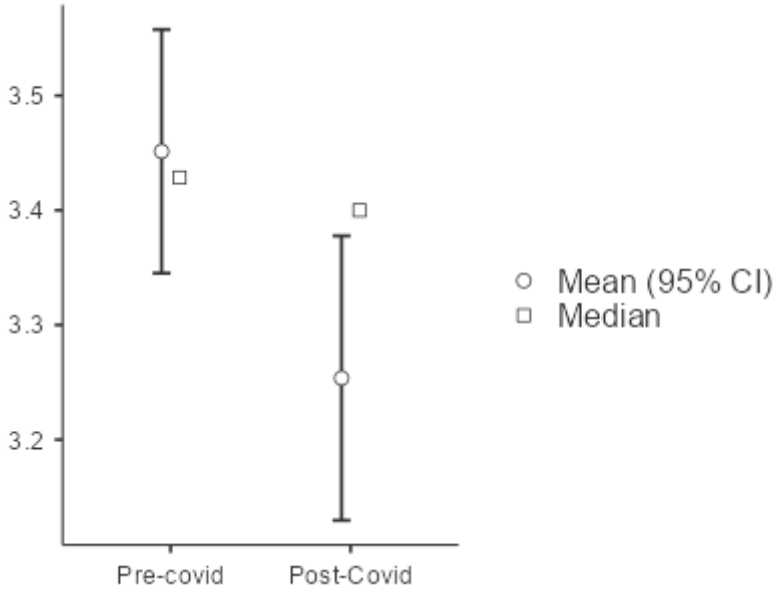

Figure 3

Perceived Learning Environment Changes" before and after Covid