

Impact of COVID-19 on Student Learning Behavior with Special Reference to Adolescent Group

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Abstract

The major challenges faced by the students in learning in the post-COVID period and the difficulties in focusing and paying attention to their course through the e-learning classes offered by their institutions detailed herewith. It is noticed that due to network issues, some difficulties in understanding lectures delivered in online mode. Students face socio-psychological issues like career concerns, lack of motivation, anxiety, and depression due to school closures. The study reveals the impact of internet usage on boys and girls. The COVID-19 pandemic has forced schools, colleges, and universities across the world to conduct classes and activities remotely. The transition of classes from regular face-to-face teaching to virtual teaching presented several challenges for both learners and facilitators. As schools across the country now open after two years of online education, Principal, teachers, and behavioural experts reported a significant rise in behavioural issues among schoolchildren like aggression, attention span deficit, sleeplessness, and emotional disturbances, especially among those who lost their near and dear ones in COVID. So it is emphasising the necessity to introduce the socio-emotional learning programmes and counselling sessions at schools. This study is based on primary data collected through a questionnaire.

Introduction

The nationwide lock down has created the largest disruption in the education system impacting nearly about 1.6 billion students in more than 200 countries. Many research works have been done in context of COVID-19's impact on various aspects. The limited access to technical resources, transactional distance, mental health, social isolation, and peer-to-peer learning has all had an impact on enrollment in COVID-19. Stress variables that have a significant impact on most students' mental health include financial hardship and loneliness. Academic performance is also likely to be impacted by social isolation brought on by the lack of a peer group, the sense of community created by spending time alone with family members, and the entrepreneurial spirit cultivated by students who use internet platforms to develop and sell their products. Closing schools, colleges, and universities is one of the actions the Indian government has taken to provide access to ongoing education during the pandemic. More than 120 million children and adolescents are worldwide have been impacted by the COVID-19 epidemic. Over

32 crore students in India have been impacted by the restrictions and the nationwide lockdown. This has opened up a wide range of possibilities for a new era of digital learning, including rapid adoption of digital technologies, increased use of learning management systems, increased usage of soft copies of learning materials, and enhanced collaborative work. The government's digital strategy for India is becoming increasingly important. Important classes have been cancelled, tests have been rescheduled, and the admissions process has all been delayed as a result of the epidemic. Additionally, most recruitment has been delayed, and student placements have been impacted. The epidemic has had an effect on unprepared teachers and students for online learning as well as on career possibilities worldwide. Many Indians have lost their overseas jobs as a result of the COVID-19 pandemic and have returned home. Due to school closings, children now have more parental responsibility for their education, have access to the internet, and are given access to global education. Due to these problems, many Indian students who were enrolled in numerous colleges abroad have had to leave those

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nations, which has had a substantial influence on the higher education system. Payment of school and college fees has been delayed as a result of COVID-19, which has had a huge impact on India's education industry. As an address to the current situation, the Government of India, along with several stakeholders, has peered into the possibilities of open and distance learning (ODL) by implementing various digital technologies. It is time for vocational institutions to improve their internal knowledge and IT infrastructure in order to better prepare them to handle issues like the COVID-19 pandemic. India needs to come up with innovative strategies to guarantee that all kids will continue to access education despite the pandemic. Investigating the effect of COVID-19 on India is a major concern in all categories of the power pyramid. The COVID-19 pandemic has had a negative effect on education, with 80% of public schools reporting "stunted behavioral and socio-emotional development" in their students, a 56% increase in classroom disruptions, a 49% increase in rowdiness outside of the classroom, a 42% increase in chronic teacher and student absenteeism, and a 61% increase in the number of public schools reporting it is "much more difficult" to find in addition to out-of-class learning frameworks that address some of the uncertainties.

Review of Literature

Both teachers and students have to take into account a number of issues as a result of the quick transition from traditional face-to-face sessions to virtual ones. To develop a meaningful and collaborative learning and social atmosphere, students and instructors must work together and actively engage in one another's lessons. In this situation, it is critical to comprehend how students behave throughout synchronous and asynchronous learning activities. The success of online education is also significantly impacted by students' opinions of the teacher-student relationship and their preferences for learning modes. The COVID-19 pandemic's negative effects on scientific education have further shown the necessity for creative frameworks and methods to mitigate their effects and offer equal and effective learning opportunities.

Lorenz S. Neuwirth. et al. (2020) studied the need for faculty and students to address a number of issues and reach an agreement in order to create a meaningful and collaborative learning and social environment as a result of the rapid shift from traditional face-to-face

classes to virtual classrooms. With adult learners, the necessity for collaboration between students and instructors is even more important because both sides must have the flexibility to actively engage through the employed online platform. To start focusing on these issues more reliably, consider the definition that follows: (1) the students' behaviour during synchronous lectures, such as turning on their computer cameras, using the raised hand tools, chat boxes, and unmuting their microphones; (2) in asynchronous formats, the students' behaviour during discussion boards immediately after or before lectures, such as by fully answering questions.

Taneja and I Dutt (2021) find out that the COVID-19 pandemic has led to a shift in teaching methods in India, with 75.32% of students favouring offline learning and 48.1% favouring virtual teaching. The study found that 98.73% of students find the teacher's competency good in offline mode, while 79.75% prefer frequent interaction. 69.62% of students are comfortable with offline mode, while 55.06% prefer online mode. The study suggests recommendations to improve teaching-learning methodology during the crisis.

Watonga Michael Opéra (2021) explained that a framework for analysing the detrimental consequences of the COVID-19 issue on science education is provided by Michael Opéra (2021). It is divided into four sections: a simulation model, a model for a home experiment, a model for a theoretical virtual lecture, and a model for interactive feedback. To explicitly address negative effects and give students options on how they participate, what they study, or how they exhibit science understanding, the suggested approach can be implemented into the decision analysis framework. Once it is put into practise, it also offers opportunities for equity, value, and efficiency, all of which could be helpful to students.

Anil Kumar Yadav (2021) described the main difficulties pupils encounter during learning, including their inability to focus, the absence of a conducive learning environment at home, and their lack of drive. Additionally, students have experienced problems such as worry about their future careers, anxiety, despair, and a lack of social and moral support. Students' post-lockdown activity shows that they prefer both in-person and online learning methods from their schools. As a result, online teaching and learning

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techniques are now included in the standard learning process and are treated similarly to traditional classroom instruction.

Marta Migocka. et al. (2021) detailed how, in addition, distance learning offers a remedy for common infrastructural issues. However, a teacher using a distance learning approach might not give their pupils enough chances to develop new abilities and successfully transfer existing knowledge. E-learning offers various benefits, including flexible time management, increased student participation in education due to different access points, lower costs, etc. The benefits and drawbacks of remote teaching should be understood by those in higher education. However, practically all reports show that teachers' commitment and capacity for knowledge transfer have a significant impact on students' performance and happiness.

Mona Alhasani et al. (2022) mentioned that, compared to undergraduates, graduate students expressed greater fear about the pandemic's effects. The virtual interface offers a chance to build technology interventions that would enhance students' perceptions of control over time and thereby lessen stress and anxiety. Lack of motivation and concentration among the students may have hampered their performance in achieving their objectives. Students' perspective of control over time might be severely impacted by not achieving desired or assigned goals.

From these studies, we understand that it's critical to address the challenges and worries students encounter when education moves to online platforms. Students' learning experiences might be hampered by problems like a poor learning environment, a lack of concentration and motivation, and insufficient social support. However, with students expressing a preference for both in-person and online learning methods, the incorporation of online teaching and learning methodologies into the traditional learning process has become crucial. Opportunities for flexible time management, greater student involvement, and cheaper expenses are provided through distance learning. However, teachers' dedication and ability to promote information transfer continue to be significant determinants affecting students' achievement and happiness. The gendered effects of the pandemic on students' levels of stress and anxiety also highlight how crucial technology solutions are for improving

students' perceptions of control over time and easing their psychological loads. Teachers may create a more inclusive and productive learning environment for students by addressing these issues and utilising the benefits of online education.

Method of Analysis

Due to COVID-19 pandemic and subsequent lockdown, the course was all of a sudden shifted to online mode from the classroom mode of teaching. To analyse the change in students' behavior, an online questionnaire was shared among students of adolescent's period with total of 380 response was received.

Research Objectives;

- To study the present perspective of students regarding the E- learning system.
- To study the impact of COVID-19 on students learning behavior.
- To examine the socio-psychological impact of COVID-19 on students of Higher secondary and graduate students in Kerala.
- To analyze the learning behavior of the students in two modes, that is traditional class room method and virtual learning method.
- To compare the efficiency of students in studying the course in pre and post covid period.
- An analytical study of pre and post covid result of higher secondary and matric students
Develop a regression model for the existing result.

Hypothesis testing:

- To test the independence of gender wise sleeping time and concentration after post covid period using chi – square method
- Correlation between internet usage and concentration power

Statistical Analysis

- We calculated descriptive statistics using frequency, mean, and standard deviation
- Examine students' stress, anxiety, internet usage, sleeping time, concentration power, behavior by computing the average score for each scale and

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conducting an independent sample chi square-test to explore possible differences based on gender

level. Also examine the efficiency of learning process

Table 1. Descriptive Statistics

		age of respondent	covid +ve	Digital usage increase after covid	Gender of the Respondent	Mode of learning method prefer	Unable to concentrate in study	time spend for doing home work	How much time you sleep every day
N	Valid	379	376	357	378	376	372	367	372
	Missing	16	19	38	17	19	23	28	23
Mean		4.33	1.27	2.35	1.51	2.07	1.41	2.03	1.41
Median		4.00	1.00	2.00	2.00	2.00	1.00	2.00	1.00
Mode		4	1	2	2	2	1	2	1
Std. Deviation		.784	.442	1.172	.501	.462	.544	.880	.544
Variance		.614	.196	1.373	.251	.213	.296	.775	.296
Range		5	1	4	1	2	3	3	3
Percent- lies	25	4.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00
	50	4.00	1.00	2.00	2.00	2.00	1.00	2.00	1.00
	75	5.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00

Table 2: Frequency Table Mode of learning method preferred

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	on line digital media	27	6.8	7.2	7.2
	traditional class room	294	74.4	78.2	85.4
	self study	55	13.9	14.6	100.0
	Total	376	95.2	100.0	
Missing	System	19	4.8		
Total		395	100.0		

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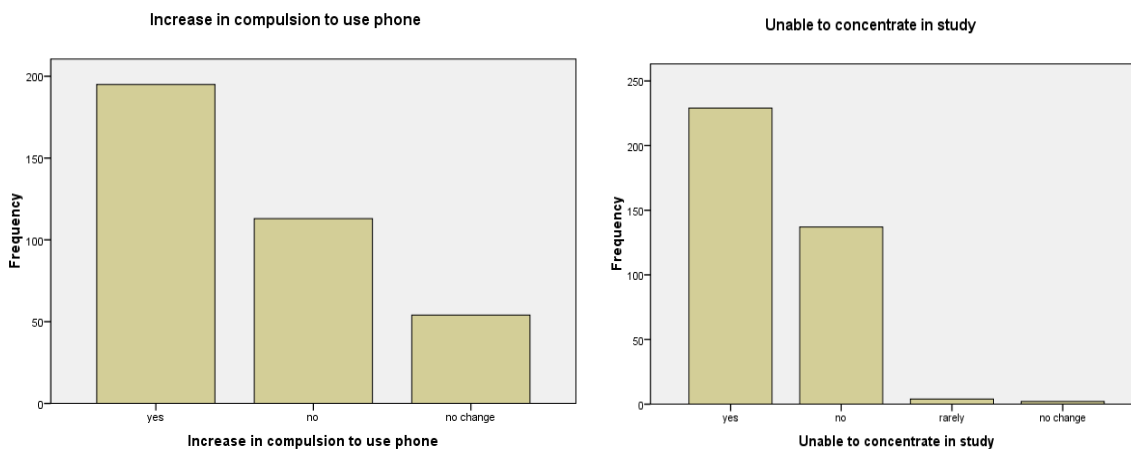


Figure 1.

Figure indicates that the smart phone makes great influence in day to life and that will negatively cause the concentration or memory power of students.

Table 3. Cross tabulation - Increase in compulsion to use phone * Unable to concentrate in study

Count		Unable to concentrate in study				Total
		yes	no	rarely	no change	
Increase in compulsion to use phone	yes	110	81	2	2	195
	no	73	36	2	0	111
	no change	38	16	0	0	54
Total		221	133	4	2	360

Consider the Null hypothesis H_0 : phone usage and concentration power are independent, Against Alternate hypothesis H_1 : phone usage and concentration power are not independent.

Table 4: chi-square Tests.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.133 ^a	6	.309
Likelihood Ratio	8.439	6	.208
Linear-by-Linear Association	5.258	1	.022
N of Valid Cases	360		

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6 cells (50.0%) have expected count less than 5. The minimum expected count is .30

Result of chi square test of independence presented in table 2 indicate that phone usage and concentration power is associated. The value of chi square is 7.133, $p=0.309 > \alpha=.05$

Table 5. Correlations

		Unable to concentrate in study	Increase in compulsion to use phone
Unable to concentrate in study	Pearson Correlation	1	-.121*
	Sig. (2-tailed)		.022
	N	372	360
Increase in compulsion to use phone	Pearson Correlation	-.121*	1
	Sig. (2-tailed)	.022	
	N	360	362

*. Correlation is significant at the 0.05 level (2-tailed).

The association among the above two factors are negatively correlated. That is increase in usage off digital media cause the decrease in the concentration power of the students.

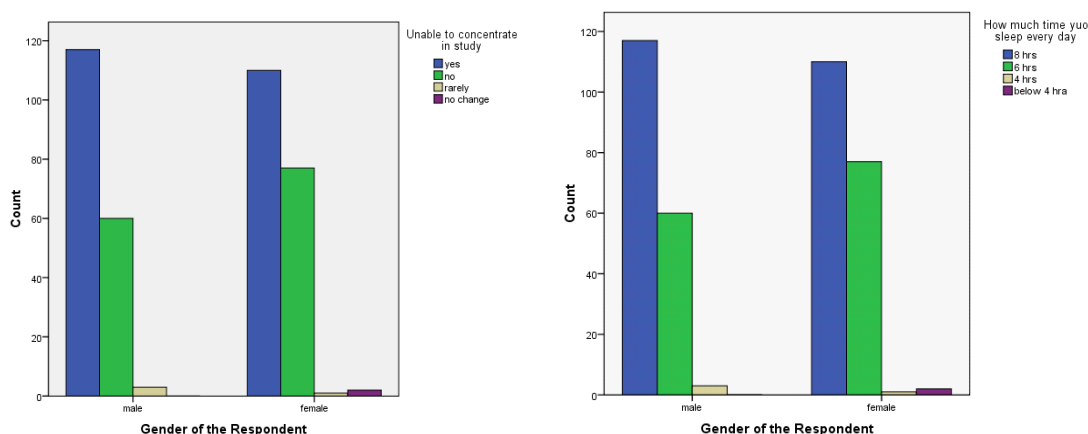


Figure 2

The above multiple bar diagrams indicates that there is no variation in gender wise sleeping time and concentration

Analytical Study of Students Result in Pre and Post Covid Period

Table 6: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
percentage12	9	80.94	95.98	88.3167	5.63146
percentage10	7	95.98	99.47	97.9114	1.23892
Valid N (list wise)	7				

Descriptive analysis shows that great variations shown in pass percentage of class12.

Var (10) < Var (12). So, efficiency of higher secondary students is comparatively less efficient than Matric students.

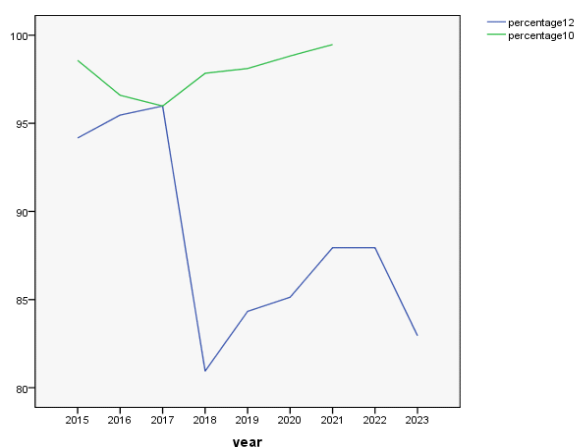


Figure 3: Time series graph

The graph shows the pass percent of 10 th and 12 th class students from 2015 to 2023 in Kerala state board examination. At 2020 or 21 the pass percent of 10 th was 98.82 and 99.47. These students are now appearing 12 board examinations with result 87.94 and

82.95 percentages. During these two years, the most of the teaching learning process done through the on-line methods. These indicates that the virtual method of learning is adversely influenced by their learning process.

SCATTER PLOT OF PERCENTAGE OF RESULT

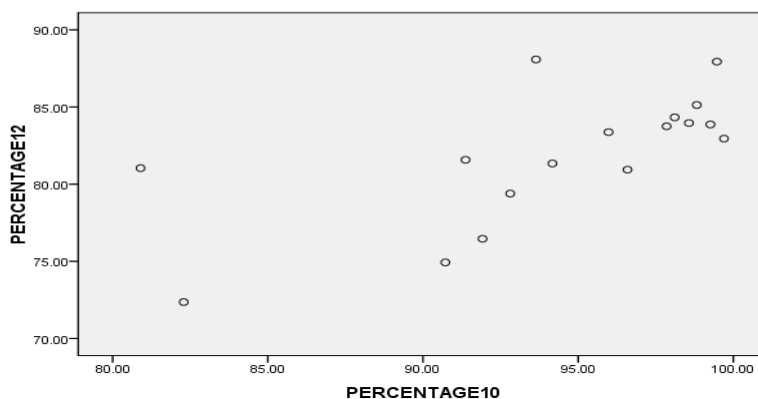


Figure 4. Scatter plot of pass percent percentage between matric & higher secondary classes

Table 7: Correlations

		Percentage 12	Percentage10
Percentage12	Pearson Correlation	1	.661**
	Sig. (2-Tailed)		.004
	N	17	17
Percentage10	Pearson Correlation	.661**	1
	Sig. (2-Tailed)	.004	
	N	17	17

**Correlation is significant at the 0.01 level (2-tailed).

Correlation coefficient between the pass percentage is 0.661; positively correlated

Coefficient of determination R^2 is nearest to 0.45.

Table :8 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	35.306	13.660		2.585	.021
	Percentage10	.494	.145	.661	3.413	.004
A. Dependent variable: percentage 12						

From the Table 8, 'a' = 0.494 (Y-intercept) and the value of 'b' =35.306 (the slope)

The regression equation is $Y = 0.494 X + 35.306$ which can be used to calculate the percentage of class 12 (dependent variable).

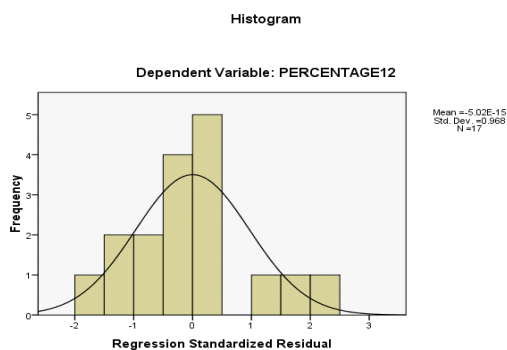


Figure 5. Histogram

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Besides from the survey we can understand that children were found to be facing several health problems such as generalized weakness, headache, sleeplessness and some other issues. Mainly, the diseases due to the intense use of Smartphone.

Conclusions and Suggestions

This paper analyses the learning behavior of students in two teaching and learning modes - traditional classroom teaching and virtual online teaching. From the responses, it is observed that 74.4% of the students are in favor of offline teaching. Further, students feel that the interaction between teacher and student is better in classroom teaching. Due to the e-learning method, most students are simultaneously greatly addicted to social media like WhatsApp, Facebook, etc. This seriously affected their concentration. Post-pandemic, there are significant changes in children in terms of how they view their teachers, their schools, their peers, and so on. Their attention span has reduced, and their writing skills have taken a toll for sure. Their sleep patterns have also gone for a toss, leading to irritability. Also, noticed an increase in behavioral issues in students due to an increase in internet usage, gaming, and excess mobile use. Afterwards the students are taking frequent breaks as they cannot sit for even 30–35 minutes in the class. We expose an overview of learning disabilities in students due to the COVID pandemic and the excess usage of the internet and mobile phones.

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