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ANALYZING THE DISPARATE IMPACT OF COVID-19 ON STUDENTS: CHALLENGES UNFOLDING THE EDUCATION SYSTEM

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Abstract

The ongoing pandemic COVID-19 has emerged as one such biggest hindrances in the education system of almost every country across the globe. To reduce the spread of COVID-19, most governments worldwide decided to shut down the educational institutions temporarily. The virus forced our education system to shift overnight to a newer set of online teaching and learning to which neither the teachers nor the students were accustomed. Although the virtual platforms have helped keep the learning mode on, it has its challenges even during such exceptional times. The paper attempts to highlight the impact of the COVID-19 crisis on students learning through online platforms and to find out the various motivating and demotivating factors in online teaching-learning as a response to mitigate the spread of the said virus.

Keywords: COVID-19, Pandemic, Motivation, Online teaching, Students, Education System

Introduction:

The ongoing pandemic COVID-19 is one of the biggest and challenging crises posing hindrances in every sector, and the education system is not an exception even. The outbreak of the COVID-19 was first identified in December 2019 in Wuhan, China. All the countries over the world cautioned the public to follow preventive measures and show responsible behavior to curtail the spread of the virus. This led to having a far-reaching impact on every walk of our lives than expected. Stay at Home, Social distancing, limited movement only in case of urgency have become the new normal ways of living due to the pandemic (Sintema, 2020).

To reduce the spread of COVID-19, most governments worldwide decided to shut down the educational institutions temporarily. A report by UNICEF states that about 47 percent of the world's student population has been immensely impacted by the nationwide lockdown declared by all the major countries as a response to COVID-19 spread. This pandemic situation has significantly disturbed our education system (Pokhrel and Chhetri, 2021). The pandemic has forced our education system to shift overnight to a newer set up online teaching and learning to

which neither the teachers nor the students were accustomed. This has taken a toll on students' mental setup to learn in new ways.

As learning and motivation go hand in hand, both are essential parts of our educational environment. Motivation plays an essential role in learning - arousal of interest in learning and is effective when it can prepare a mindset towards gaining knowledge or learning something. However, sometimes the environmental factors create an obstacle in the learning process that makes the students unable to concentrate on their studies. Motivation is a reason to do or not to do anything. So, it is a continuous process, and lack of motivation creates a more significant hindrance in the students' learning process. Although the Government has already made great efforts to reduce the spread of the virus and take precautionary measures through vaccination, it is still a great challenge for one to combat the virus.

Furthermore, COVID-19 has caused so many uncertainties in life that students are confused about what to focus upon at this hour- to get attuned to online learning or build a strong immunity system to fight the virus. Therefore, the present paper is an attempt to analyze the present mindset of the students in times of crisis and how motivated or de-motivated they feel when it comes to online teaching and learning system.

Review of literature

Since the outbreak of the COVID-19 Pandemic, various researchers have studied the far-fetched impacts, directly or indirectly, of the virus on our education system. Due to new norms such as social distancing and no physical interaction during the pandemic, the educators were forced to shift from physical classroom learning to digital classrooms set up quickly. Undoubtedly, the online mode of education helped both teachers and the taught stay connected and keep learning even amid disruptions caused by the pandemic. Though Gupta and Garg (2021) opined that COVID-19 has been instrumental in implementing innovative solutions in educational institutions worldwide, but the online way of education has its challenges. One uniform system cannot cater to the needs of the variety of courses that need a different and specialized setup of learning.

Moreover, it is difficult for teachers and students to immediately adapt to newer online education settings (Daucet, A. et al., 2020). Online education involves changing and sensitizing the teachers, students, and institutions to the nuances and necessities of learning in an online mode (Pandit and Agrawal, 2021). Effective use of ICT tools requires proper training for the teachers and learners accustomed to the traditional classroom setup having a room with a chalkboard. Although the online platforms such as Google classroom, Blackboard, etc., also allow the users to create the same effects or may be better than the physical setup, their use depends upon the skill and efficiency of the users (Petrie, 2020).

The academic performance of the students may get affected by the online education system in the current scenario. It is suitable for bright students who do not need direct supervision. Still, for weaker students, it may affect a lot because their contact hours with the teachers would be less than personal interaction during on-campus classes (Sintema, 2020). Suspension of face-to-face interactions between students and teachers during the pandemic has adversely affected students' learning. There has been found that school students have made very little or even no progress during the pandemic, especially in the countries where digital infrastructure is not fully developed (Per Engzell et al, 2021).

School, colleges, universities are not just the places where the only study is facilitated. These are where children grow and nurture with many more learning experiences than just the bookish knowledge. They learn working in peer groups; they learn to develop social skills and general awareness. However, with virtual learning, they are missing various social and psychological growth opportunities. Moreover, due to the pandemic, domestic violence cases have surged up that further cause mental distractions and stress on students' minds while attending online classes sitting at home only (Ravichandran and Shah, 2020).

Thus, there is a dire need to understand the students' mindset during the present crisis and the various factors affecting their motivation to learn. The study would help educators build a system that can provide quality education even when facing uncertain and exceptional times without affecting the learners. A hybrid model must be developed, having face-to-face and remote learning to provide for future shocks. The system should also provide for more personalized teachings to reach the students individually (Robin Donnelly et al, 2021).

Objectives of the study

In general, the study aims to analyze the impact of COVID-19 on the motivation level of the students. Precisely, the study aims

- To understand the present mindset of the students during the pandemic era.
- To analyze the various motivating and demotivating factors in the teaching-learning process in online settings.
- To find out the level of students' satisfaction with the online teaching mode.
- To gauge the impact of covid-19 on the lives of the students.

Database and Research methodology: The study is based upon primary data that has been collected through a structured questionnaire. The questionnaire was administered randomly to 250 students belonging to different higher educational institutes situated in Punjab, Haryana, and Chandigarh, out of which 210 students responded with duly filled-up questionnaires. The

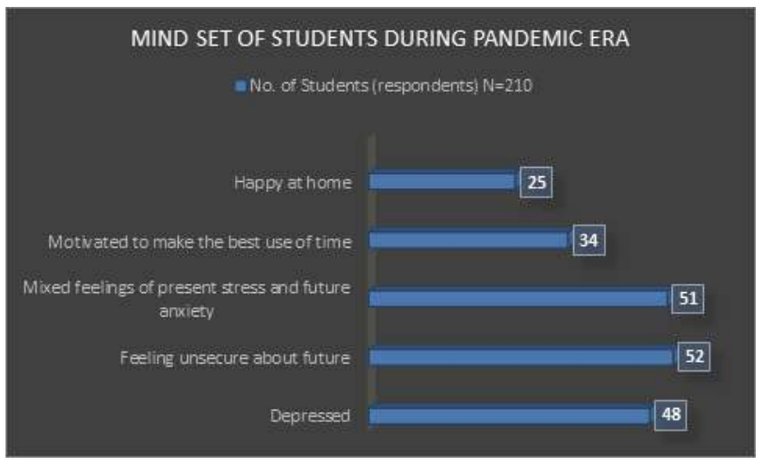
Exploratory Factor Analysis and Confirmatory Factor Analysis have been applied to explore and confirm motivating and demotivating factors in the teaching-learning process in online settings. Twenty-two statements were taken and quantified on a five-point Likert scale ranging from strongly agree to disagree with assessing the factors strongly. Further, descriptive statistical tools were used to analyze the data.

Data Analysis and interpretation:

The purpose of the study is to understand the mindset of the students in the unprecedent COVID era. The pandemic has had a huge impact on the lives of every age of people. Therefore, the present study mainly focused on the feelings of the students during this period.

Table 1: The Present Mindset of The Students During Pandemic Era

Students' Present Mindset	No. of Students (respondents) N=210
Depressed	48
Feeling unsecure about future	52
Mixed feelings of present stress and future anxiety	51
Motivated to make the best use of time	34
Happy at home	25

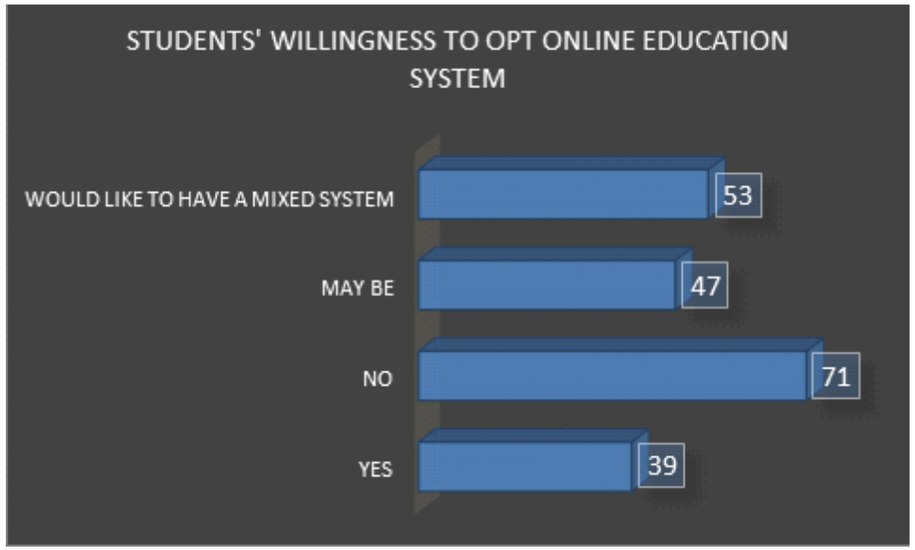


The above table and diagram indicate that most of the students are feeling unsecure about the future and have mixed feelings of present stress and future anxiety. They are also worried about their future and feeling depressed during this pandemic. On the contrary, out of 210 (34 +25) students feel motivated to make the best use of time and feel happy to stay at home. These students have a positive attitude towards their future, and they think the future will be better than the present period

Furthermore, respondents were asked if they would like to continue online learning even after the adverse situation gets back to normalcy. Following are their responses:

Table 2 Students' Choice of continuing with online education

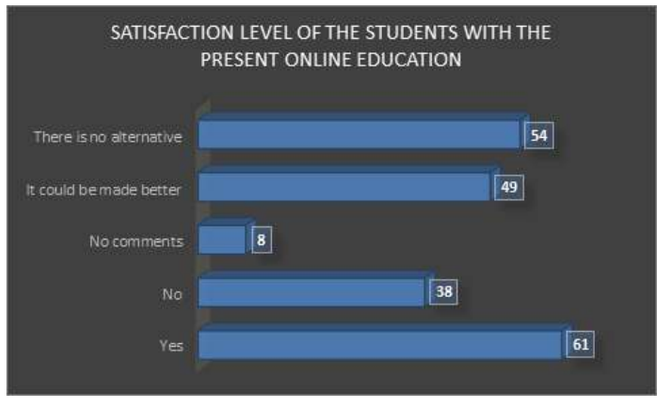
Students' Response	No. of Students (Respondents)
Yes	39
No	71
May be	47
I would like to have a mixed system	53



Next, the respondents were asked to state whether they are satisfied with the online education they are getting during the pandemic following responses were recorded:

Table 3. Satisfaction level of the students with the present online education given the pandemic situation

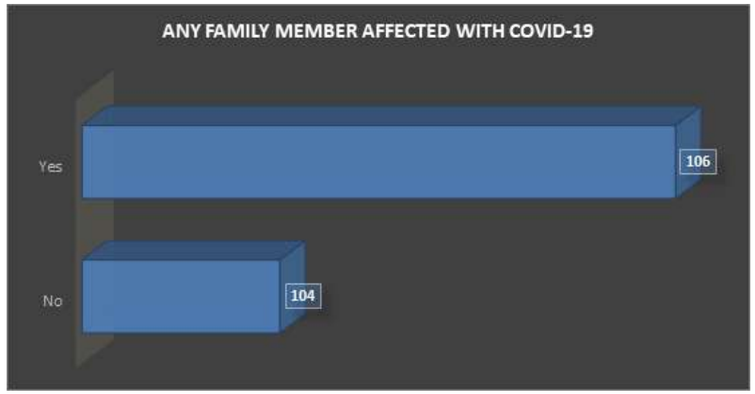
Students' Response	No of Responses
Yes	61
No	38
No comments	08
It could be made better	49
There is no alternative	54



The above responses show that around 29% of respondents are happy with online education given the pandemic, while 18% of respondents are not satisfied with the online education system. About 26% of respondents feel that the online education system is not their choice. Still, they do not have any alternative, so they have to go by it, but it could have been made better and effective if used effectively and supported by all technical infrastructure (23%).

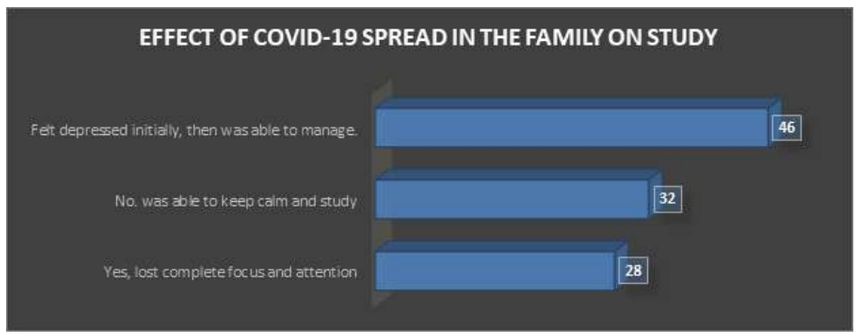
The following table shows the data regarding COVID-affected respondents in response to whether they or any of their family members have been affected by VIRUS.

Any family member affected by Covid-19	No. of Respondents
No	104
Yes	106



The table shows almost half of the respondents have faced COVID-19 in their families. This is the biggest reason behind their mental stress and adverse effect on their studies. As shown in the below table, 28 respondents have expressed that they completely lost their attention and focused on studies as the virus hit their family, and they (32) were not able to keep calm while 46 respondents were, luckily, able to manage their stress effectively. As a result, they could come out of the situation with their physical and mental strength.

Students' Response	No. of Responses
Yes, lost complete focus and attention	28
No. was able to keep calm and study	32
Felt depressed initially, then was able to manage.	46



Exploratory Factor Analysis

Considerations for the data reduction strategy, exploratory factor analysis was used. Exploratory factor analysis is a helpful tool for understanding the dimensionality of a set of variables and isolating variables that do not represent the dimensions well (Dobni,2008, pp. 550).

Before applying the EFA, the reliability of the scale was measured. The value of Cronbach's alpha was found to be 0.850. Further, to assess the appropriateness of the factor model, the values of Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) were calculated as depicted in table 6.

Kaiser Meyer Olkin Measure of Sampling Adequacy		.852
Bartlett's Test of Sphericity	Approx. Chi-Square	2735.793
	df	231
	Sig.	.000

KMO is a measure of testing the adequacy of sample size, and its value should be greater than 0.5 (Kaiser, 1974). Bartlett's sphericity test indicates a significant correlation among at least some of the variables, and a significant value of less than 0.05 is required (Hair et al., 2013). The values of KMO and Bartlett's test of sphericity were found in acceptable limits. Hence, it is good to pursue further to extract factors.

Extraction of Factors

The initial rotated component matrix consisted of four factors. These factors solution accounted for 63.083 percent of the variance, which is greater than the minimum acceptable limit of 60 percent as recommended by Hair et al. (2013). For each factor, the variables having factor loadings of 0.5 or more are taken into consideration.

Table 7: Factor Naming and Loadings

Factor Name	Label	Statement	Factor Loadings
Social, Psychological, and Technical Issues	V2	It is like not getting an education at all	.555
	V3	There is lot of distractions studying online at home	.807
	V4	It is not as interactive as offline education	.848
	V7	Lack of physical activities brings health problems	.555
	V8	Missing on campus enjoyment with friends	.660
	V13	Don't get much opportunity to ask questions during online class	.580
	V14	Feels the need to have eye contact with the teacher	.763
	V16	Technical hurdles are the major issues	.716
	V18	It is frustrating and boring to attend online classes	.723
	V19	Feels the need to study in peer groups	.794
	V20	Parents are more burdened to arrange the technical infrastructure to study online	.808
Save time and money	V5	It is very effective , and students participate actively	.671
	V6	Less travel time gives more time to study	.582
	V15	It saves on transportation costs	.543
	V17	Teachers provide feedback on any assignments submitted	.741
	V21	There is a big opportunity to study online and do a job/business simultaneously	.859
	V22	Teachers provide extra study material/notes	.864
Safety and Convenience	V1	It is the best way of getting an education being safer at home	.693
	V9	Making best use of social networking with friends	.636
	V10	Online exams are very convenient	.798
Choice Based/ Flexibility	V11	More choice of attending or not attending online classes	.860
	V12	Less burden of assignments and class tests	.857

After exploring the factors, the confirmatory factor analysis was performed to confirm the factors.

Social, Psychological, and Technical Issues- These issues sometimes demotivate the students in the teaching-learning process in online settings. They feel that there is a lack of interaction with the teachers and classmates during the online study, so online teaching creates an environment of frustration and boredom. Moreover, students face many distractions while studying online at home, including technical issues in the internet and devices used for classes like mobile phones, laptops, tabs, etc. In addition to school and college fees, the parents have to spend huge money on the arrangements of technical instruments, which ultimately creates a burden on the students' parents.

Moreover, the social circle and enjoyment of the students with their friends at campus get ruined with online teaching. Lack of physical activities of the students becomes the primary cause of their health issues like depression, overweight.

Save time and money- Despite the negative impact of online teaching on students learning process, some students take online teaching positively. They opined that online teaching is an effective & interactive way of teaching, and students can participate actively. Moreover, teachers also timely provide study material and notes to students for better learning. On the other hand, online teaching helps the students save their time and commuting cost and, in the meantime, while students can spend their time doing jobs and business.

Safety and Convenience- Online teaching is one of the best ways of learning for those students who prefer to stay at home during COVID-19. They think that it is convenient and safe to give online exams than appearing offline. On the other hand, they can explore their social networks with their friends to solve their problems.

Choice Based/ Flexibility- Online teaching environment provides comfort to students as they can skip any class during urgency and sickness. Moreover, there is less burden of assignments and tests for the students.

Confirmatory Factor Analysis

Confirmatory factor analysis was applied to confirm the motivating and demotivating factors in the teaching-learning process in online settings. For the assessment of the measurement model, multiple fit indexes are calculated, such as chi-square/degree of freedom, Comparative fit index (CFI), Tucker Lewis Index (TLI), Incremental fit index (IFI), Root mean square error of approximation (RMSEA) and Root mean square residual (RMR). The error terms in the confirmatory model are correlated to improve the fitness of the model to data.

Table 8

Goodness of Fit Results of the Measurement Model

Variable	CMIN/DF	CFI	TLI	IFI	RMSEA	RMR
Value	2.893	0.91	0.90	0.91	0.045	0.032
Acceptable Limit	<=5.00	>0.9	>0.9	>0.9	<0.1	<0.05

After correlating the error terms, the values of all the fit indices were improved. The value of chi-square/ degree of freedom is 2.893, which is less than the value of 5.00 as recommended by Hoyle (1995). The values of Comparative Fit Index (CFI), Tucker- Lewis Index (TLI), and Incremental Fit Index (IFI) were found to be greater than the threshold point of 0.9 recommended by (Hoyle, 1995; Fadlelmula, 2011). The value of Root Mean Square Error of Approximation (RMSEA) is 0.045, less than the value 0.10, the threshold limit, suggested by (Fadlelmula, 2011). Moreover, the value of Root Mean Square Residual (RMR) is 0.032, below the threshold limit of 0.05, recommended by (Fadlelmula, 2011). Since the values of all the fit indices are found in the acceptable range, indicates a good fit of the model to data.

Assessing Reliability and Validity of Measurement Scale

The composite reliability of the scale was calculated to ensure the internal consistency of the scale. Furthermore, the scale's construct validity was ensured by calculating convergent and discriminant validity of the scale.

Table 9

Reliability and Validity of Measurement Scale

Latent Variables	Composite Reliability	AVE	MSV	ASV
Social psychological and technical issues	0.911	0.511	0.133	0.061
Save time and money	0.855	0.502	0.491	0.166
Safety and Convenience	0.759	0.513	0.491	0.211
Choice Based	0.933	0.894	0.049	0.021

The value of Composite Reliability (CR) of each construct is greater than the threshold limit of 0.7, recommended by (Nunnally and Berstein, 1994). Further, the values of composite reliability and AVE are compared to ensure convergent validity. In the abovementioned table, the values of average variance extracted indicate that the latent construct explains 50 percent or more of the variance in the observed variables. Finally, to ensure the scale's reliability, the composite reliability of each factor should be more than its average variance extracted. And all the conditions are satisfied as depicted in table 2.

On the other hand, to ensure the discriminant validity of the scale, two conditions must have to be satisfied. First, maximum Shared variance (MSV) always should be less than Average Variance Extracted (AVE), and Average Shared Variance should be less than Average Variance Extracted (AVE). Hence, the above results ensure the discriminant validity of the scale.

Responses from students towards the question of how they are trying to keep themselves motivated under the current depressing pandemic situation

Based on their responses and comments, respondents have been categorized into three as follows:

Table 10: Students Responsiveness to Pandemic Stress

No. of students with Optimistic Approach		No. of students with Pessimistic Approach		No. of students with Neutral Approach	
Think positive	48	Can't Keep calm	43	Give it time to get back to normal	17
Do exercise and meditation	36	Feeling depressed	23	Don't listen to the news	9
Pursuing favorite hobbies	32	Future is very insecure	19	Let the life move on as it is	10
Eating healthy	67	The career will be poorly affected	34		
Learning new things	25	Adversely Affected academic performance	29		
Focus on studies	41	Offline teaching was the best	26		

The above table (Table no. 10) shows that although students are under stress due to the uncertainties caused by the still ongoing pandemic, they are trying to cope with the situation with varying strategies as per their choice and convenience. The majority of the students are optimistic about the future and dealing with it with greater positivity and strength. They are making their mental and positive health stronger by taking a healthy diet and doing yoga, exercises, and mediation. However, many students are very pessimistic to the adversities caused by the pandemic on their lives and careers. They (26) also find it very difficult to learn effectively through online mode. Few students are even neutral while responding to the COVID-caused stress. As they feel everything is beyond their control, it is better to leave the situation to get back to normalcy.

Based on the responses mentioned above, the following are some of the suggestions listed down for the students to balance their minds under depressed pandemic situations and focus on the study:

1. Positive approach towards life
2. Exercise, yoga, and meditation
3. Pursue your hobbies
4. Better utilization of free time
5. Eat healthily and stay healthy
6. Follow the safety norms
7. Learning new things
8. Share the feelings
9. Enjoy family time
10. Focus on study
11. Avoid misleading news and rumors
12. Make the best use of technology
13. Co-operation and understanding is the key
14. Active participation in digital classrooms
15. Healthy use of social media

Conclusion

The study provides a deep insight into the impact of COVID-19 on students in every aspect. It has affected their academic performance. Due to the lack of technical infrastructure with the teachers and students, online education has been very challenging. The virus has taken a toll on the

students' mental health as they are under stress and not finding themselves able to focus on study. But there is another side of the coin too. Although students are somewhat demotivated at present, they are very positively thinking about a normal future and preparing themselves to be physically and mentally healthy to the extent possible. The future is uncertain, there is no doubt about it, but there should be united efforts to streamline the challenges. The education environment should be made so strong to face such natural shocks in the future too. The hybrid education model is one of the suggested options where students and teachers are well conversant with the digital medium of learning and have personal physical interaction on a one-to-one basis. As the results of exploratory and confirmatory factor analysis indicates that there are some motivating and demotivating factors in teaching-learning process in online settings. These factors include social, psychological and technical issues; save time and money; safety and convenience; choice-based/flexibility. Therefore, the educational institutes should also organize such motivational webinars and events for students to teach them how to balance their study and health. Stress management should be taught to them by the expert faculties as students are the future of the nation.

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