

# Impact Of COVID-19 On Student Learning: Opportunities, Barriers And Outcomes

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## Abstract

The impact of pandemic (COVID-19) has been observed in every sector all over the world. The education sector in India as well as the world is largely affected by this. It had enforced worldwide lockdown creating a lot of challenges to the students' life. Around 32 crore learners were effected and they couldn't attend colleges/schools and all educational activities halted. The outbreak of COVID-19 has taught us that change is inevitable. It has worked as a catalyst for the educational institutional to grow and adopt technology based platforms of digital learning that have not been used before. There has been a shift from traditional methods of teaching and learning to online learning. This study is aimed at depicting the impact of COVID-19 on student learning and associated opportunities, barriers and outcomes of the pandemic. The main concerns of this paper are to find out both positive and negative aspects of the pandemic on student learning in addition to suggesting some remedial measures. It unfolds the difficulties encountered while using online learning platforms, skills developed while studying during pandemic, interaction and communication with teachers, students' opinion on online education considering the experience during Covid-19 pandemic as well as the satisfaction of the learners with present way of teaching (i.e online mode). It also recognises the perceived advantages and disadvantages of online education. For achieving the purpose of this study, questionnaire made in Google forms was used. The data was collected from students of University of Jammu, Union Territory of J&K, India, by simple random sampling.

**Keywords:** COVID-19, Digital learning platforms, Impact of pandemic, Information resources, Online education

## 1. Introduction

### 1.1 Background of the study

Corona viruses are group of viruses that cause minor illness to severe diseases. At the end of the year 2019, a novel corona virus was identified as the cause of a cluster of Pneumonia cases in Wuhan, a city in the Hubei province of China. It rapidly spread, resulting in an epidemic throughout China followed by an increased number of cases in other countries throughout the world. In February 2020, the World Health Organisation designated it as Coronavirus disease 2019 (COVID-19). The virus that causes COVID-19 is severe acute

respiratory syndrome corona virus 2(SARS-CoV-2), previously referred to as 2019-nCoV.

Since the first episode of cases in Wuhan at the end of 2019, significant numbers of COVID-19 cases started to be reported in China. These include all laboratory confirmed cases as well as clinically diagnosed cases in Hubei province. At joint world health organization (WHO); China fact-finding mission estimated that the epidemic in China peaked between January and early February 2020. Increased numbers of cases have also been reported in other countries across and continents except Antarctica. These cases initially occurred mainly among travellers from

China and those who have contact with travellers from China. However, ongoing local transmission driven smaller outbreaks in some locations outside of China including South Korea, Italy, Iran and Japan and infections elsewhere, have identified in travellers from those countries. In United States several clusters of COVID- 19 with local transmission have been identified throughout the country.

The first case of COVID- 19 pandemic in India was reported on 30 Jan, 2020 in the state of Kerala and the affected had a travel history from Wuhan, China. The first death due to COVID- 19 was reported in India on March 12, 2020. Lockdowns were announced in Kerala on 23<sup>rd</sup> March and in the rest of the country on 25 March. By mid-May 2020, five cities accounted for around half of all reported cases in the country viz. [Mumbai](#), [Delhi](#), [Ahmadabad](#), [Chennai](#) and [Thane](#).

### **1.2 Covid-19 and the Indian Education System:**

The COVID pandemic has stretched worldwide thereby compelling the individuals in the society to keep social distancing and to stay homes and also to curtail unnecessary movements. Its effect on the education sector is significant. The educational system in India is not fully developed and still mid-day meal program is followed to attract students to join schools and get education. The nationwide imposed by the Indian government on March 25<sup>th</sup>, 2020 to combat Covid-19 made severe impact on education system. India has world's 2<sup>nd</sup> largest school system after China. According to UNESCO, 63 million teachers were affected in 165 countries and 1.3 billion learners around the world are affected by closure of institutions due to COVID -19. In India alone, the figure is near about 320 million.

To control and prevent the spread of COVID-19, Indian govt. declared lockdown in the country and closing down of educational institutions as a rational move to implement social distancing among the students and with communities. This nationwide lockdown has had a tremendous impact on education system of the country, especially for students from rural areas. Since, the Indian education system is dominated by classroom study, the present scenario made functioning of education institutions difficult. All educational activities

like examinations, school admissions, entrance tests for various universities were postponed indefinitely. But, at the same time, it opened up new gates to adopt technology in teaching and learning.

Initially, the educators and students were quite confused and didn't understand how to cope up with situation of this sudden crises that compelled closure and educational activities. But later on, all realised that lockdown has taught so many lessons to manage with the emergence of such pandemics. Thus Covid-19 has created many challenges and opportunities for education institutions to strengthen their technological knowledge and infrastructure. This lockdown has given them a ray of hope for teachers and students to continue their educational activities through online mode using information and communication technology. The teachers assigned work to students via internet, delivered lectures through apps like Zoom, Google Meet, YouTube, Skype etc.

### **1.3 Significance of study:**

The covid-19 pandemic has collapsed the entire education system. It has impacted almost every individual in one aspect or another. This study is focussed on finding out the impact of Covid-19 pandemic on Jammu University students. This study enables us to understand the challenges or difficulties being faced by students and the positive impacts (if any) to get their needs fulfilled and level of satisfaction during this particular phase of Covid-19.

### **1.4 Objectives of the study:**

This study is focussed on following objectives:

- To highlight of the impact of Covid-19 on Jammu University students.
- To find out the problems faced by students.
- To find out the satisfaction level among students with present online mode of teaching learning process.
- To enlist some suggestive measures for students to continue their studies during this pandemic.

### **1.5 Delimitations of the study**

1. The study was confined to students of Jammu University only.

2. The study was confined to a sample of 90 students only.

## 2. Literature review

Before conducting any specific research, the investigator must be thoroughly familiar with previous theory and practice. A review of related literature is one of essential steps for the conduct of research study. It enables the researcher to work out the finer details of his / her research problem. It helps to save time and resources. It is one of the important aspects of a research project.

It is very valuable task for an investigator to have a comprehensive survey of what already has been done on the problem and its related studies. Survey of related literature avoids the risk of duplication, provides details which are valuable in formulating in the problem and contributes to the general scholarship of the investigator. The review is a careful examination of a body of literature pointing towards the answer to researcher's question.

The survey of related literature is a crucial aspect of the study and the time spent on such survey not only helps the investigator in avoiding the duplication of work but also helps researcher with regard to methods followed, devices of data collection, analysis of data and conclusions arrived in similar type of studies.

### Review of Related Literature

1. Kumar Jena (2020) conducted a study on impact of Covid-19 on education of students in India and he found that Covid-19 hampered the educational activity classes have been suspended and exams of different levels has been postponed due to continuity in lockdown. It will be difficult for the students to continue their education after a gap in academics due to the lockdown.

2. Soland, Kuhfeld, Tarasawa, Johnson, Ruzek, and Liu (2020) conducted a study on impact of Covid-19 on students' achievement and what it may mean for educators and they found that many students had difficulty concentrating and often symptoms of depression. Many students may face greater food insecurity, loss of family income, loss of family members to corona virus and the fear of catching the virus themselves.

3. Bains, Sharma, Rani and Dhar (2020) conducted a study on Study patterns among Jammu University students during Covid-19 phase and found that the students of Jammu University have experienced great difficulties to get their information needs fulfilled. Majority of students weren't satisfied with the present way of obtaining information and encountered problems like network issues, inadequate tools and inadequate collection of materials.

4. Grubic, Badovinac and Johri (2020) conducted a research on student's mental health in the midst of Covid-19 pandemic and found that there is a heightened level of psychological distress, a reduced motivational towards studies and increased pressures to learn independently.

5. Rawal, M. (2021) conducted a study on impact of Covid-19 on Indian Education System and he found that Covid-19 has immensely impacted the education sector of India. India is not in a condition to extend education to every section in the country by means of digital platforms. The students who aren't privileged take the others will suffer due to present choice of digital platforms. He found out that there is an urgent need to take efforts on maximum utilization of online platforms. India should develop strategies to ensure that all children have sustainable access to learning during covid-19 Pandemic.

6. Chaturvedi and Singh conducted a study on Covid-19 and its impact on education, social life and mental health of students (2021). The findings indicated that the Covid-19 outbreak has made a significant impact on mental health education and daily routine of students. The interruptions due to COVID pose challenges and present an opportunity to evaluate alternative steps in education. The new policies and guidelines in this direction would help mitigate some of the negative effects and prepare students and education for further health crises.

7. Pokhrel and Chhetri conducted a study on impact of Covid-19 pandemic on teaching and learning (2021) across the country and their results have shown that although various studies have been carried that, the suitable pedagogy and platform for different class levels of Higher Secondary, Middle and Primary education need to be explored internet

bandwidth is relatively low with lesser access points and data, packages are costly in comparison to income of the people in this country, thus making accessibility and affordability inadequate. The lesson learnt from this pandemic is that teachers and students/learners should be oriented on use of different online educational tools. They should be encouraged to use online tools to enhance teaching and learning.

8. Ravichandran, Palanichami, Kalaiselvan, Muthukumar and Mahalingam (2021) conducted a research on psychological impact of Covid-19 lockdown on college students across India- a cross sectional study. A semi structural questionnaire containing 21 items of depression anxiety and stress scale was circulated through social media. College students from different states across India participated. Results showed that 53.1%, 37.2% and 24.3% had symptoms of depression, anxiety and stress respectively with varying severities. Significant association of negative emotional states with decreased time spent with their family and friends and its effects, increased incidence of domestic violence, increase sleep duration, disturb sleep financial crises etc. were found. This led to conclusions that Covid-19 is building psychological distress among vulnerable college students as they are forced to stay home, along with worsening lifestyle changes, family educations and time spent on various activities.

### **3. METHODS AND PROCEDURE**

#### **3.1 Method used**

By method one means a systematic approach towards a particular phenomenon. In the present study, the researcher has used the descriptive method of research.

Descriptive research involves:

1. Survey studies
2. Interrelationship studies
3. Developmental studies

As for the present study, the investigator decided to conduct a survey study to know the Impact of COVID-19 Pandemic on Jammu University students. Survey studies are conducted to collect detailed description of existing phenomena with the intent of employing data to justify the current conditions

and practices or to make more intelligent plans for improving them.

#### **3.2 Population**

Population is any group of individuals having one or more characteristics in common that are of interest to the researcher. The population may be all the individuals of a particular type, or a more restricted part of that group. Population mainly is of two types: finite and infinite population. A population with a finite number of individuals, members or units is called finite. And population with infinite number of individuals is known as infinite population (Koul, 1984, Best and Kahn, 2001).

In the present studies, population comprises of students of Jammu University, J&K India.

#### **3.3 Sampling**

The investigator can never collect data from the whole population in any investigation. The size of sample varies from study to study, method followed and nature of population. A good sample enables us to draw conclusions about the characteristics of population after studying only those subjects that are included in the sample and effective generalization can be made. It saves the investigators' time money and energy.

For the present study, Simple Random sampling technique was employed to collect the data from a sample of 90 students of Jammu University.

#### **3.4 Selection of tool and technique**

Various tools are used to collect the data needed for studying any problem. Tools and techniques are the ways and means to conduct research and it could only be justified through the use of appropriate methods and technique meant for it. For the collection of data in this study, self-made questionnaires were used. The data collected/gathered from respondents was analysed to understand the impact of Covid-19 pandemic on Jammu University students.

#### **Why Questionnaire is used as a tool in the present study**

It is used because-

1. Questionnaire provides a convenient way to gather information from the target population.

2. Questionnaire is cheap, quick and provides relatively easy access to geographically scattered respondents.
3. They are easy to plan, construct and administer.
4. They offer a quick way to get results.
5. Directions are clear and complete.

### Preparation of Questionnaire

A self-made closed ended questionnaire consisting of 31 items was prepared through Google forms keeping in view the situation of COVID-19 and to eliminate physical contact. The questionnaire was distributed online to the students. All items fulfil the demand of the study. The questions were framed in such a manner which enabled us to measure the impact of COVID-19 Pandemic on Jammu University students.

Table 1(a): Gender distribution

Gender	Percentage
Male	22.2%
Female	77.8%
Total	100%

### (b) Age of the Respondents

The below Table no. 1(b) shows age group of the respondents:

Table 1(b): Age distribution

Age group	Percentage
18-24	66.7%
25-30	31.1%
Above 30	2.2%
Total	100%

### (c) Type of degree course

Among the respondents, 49.7% belong to UG (undergraduate) courses, 44.4% belong to PG (postgraduate) courses and 7.8% are research scholars.

Table 1(c): Type of degree

Course	Percentage
UG	47.8%
PG	44.4%
Research Scholars	7.8%
Total	100%

### 3.5 STATISTICAL METHOD EMPLOYED

In this study, simple statistical technique is used for analysis of data, known as, Percentage technique. Here the responses of multiple students will be calculated by the formula given below:

$$\frac{\text{No. of responses collected} \times 100}{\text{Total no. of sample}}$$

### 4. ANALYSIS AND INTERPRETATION OF DATA

#### Item No. 1: Information Regarding Respondents

##### (a) Gender of the Respondents

The below Table no. 1(a) shows gender distribution of the respondents, where it can be found that female participation is high (77.8%) than that of males (22.2%).

#### Item No. 2: Possibility to connect to the internet: -

In response to possibility to connect to the internet, respondents have different opinions as shown in below table no.2:

Table 2: Possibility to connect to internet

Possibility to connect	Percentage
Very Good	14.4%
Good	47.8%
Neutral	25.6%
Bad	8.9%
Very bad	3.3%
Total	100%

**Item No. 3: Ability to handle digital platforms for online classes.**

In response to ability to handle digital platforms, respondents have varying levels of ability (as shown in table no. 3). It has been found that more than half of the total respondents were good at handling digital platforms. Following is the table:

Table 3: Ability to handle digital platforms

Ability	Percentage
Very Good	17%
Good	52.2%
Neutral	20%
Bad	6.2%
Very bad	5.6%
Total	100%

**Item No. 4: Efficiency of digital learning platforms.**

In response to efficiency of digital platforms, respondents have different opinions shown in below table 4:

Table 4: Efficiency of digital learning platforms

Efficiency	Percentage
Very Good	13.3%
Good	50%
Neutral	27.8%
Bad	5.3%
Very bad	3.6%
Total	100%

**Item No. 5: Difficulties encountered while using online platforms:**

There were many difficulties encountered while using online platforms, which is evident from the following table no. 5:

Table 5: Difficulties while using online platforms (respondents were allowed to choose multiple options)

Difficulty	Percentage
Connection issues	70%
Unsuitable learning conditions	22.2%
Power Cut	16.7%
Some other difficulty	24.4%

**Item No. 6: Sources of information used during Covid-19.**

The students were asked about the sources of information they have used during Covid-19, and they were allowed to tick mark more than one option. Table 6 given below shows the sources of info used:

Table 6: Sources of information used

Sources used	Percentage
e-books	20%
Online Databases	60%
Journals	8.9%
Reference Books	18.9%
Search engines	32.2%

**Item No. 7: Collection of desired information with resources available.**

There are varying degrees of extent to which respondents were able to collect desired information as given in below table 7:

Table 7: Collection of desired information

Degree of extent	Percentage
To great extent	8.9%
To medium extent	56.6%
Somewhat	25.6%
Can't Say	10%
Total	100%

**Item No. 8: Time donated in information gathering**

It is evident from the below table no.8 that 30% of the students devoted 1-2 hours 34.4% students/respondents devoted 2-3 hours, 16.7% respondents devoted 4-5 hours and rest 18.9% respondents devoted more than five hours in information gathering.

Table 8: Time donated in information gathering

Time donated	Percentage
1-2 Hours	30%
2-3 Hours	34.4%
4-5 Hours	16.7%
More than 5 Hours	18.9%
Total	100%

**Item No. 9: If respondents have joined any online courses during Covid-19 Pandemic**

It is evident from the table 9 below that 58.9% respondents have joined online courses during COVID pandemic, 38.9% respondents have not joined any course while 2.2% were planning to opt for it in due course of time.

Table 9: Any online course joined during the pandemic

Response	Percentage
Yes	58.9%
No	38.9%
Planning to opt	2.2%

Total	100%
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**Item No. 10: Skills developed while studying during pandemic**

Knowledge application (18.9%), communication skills (11.1%), information handling (12.2%) and self-learning (57.8%) are the characteristics learnt by students while studying during pandemic as shown in below table 10. Self learning is a major characteristic with maximum responses.

Table 10: Skills developed while studying during pandemic

Skills	Percentage
Knowledge application	18.9%
Communication Skills	11.1%
Information Handling	12.2%
Self-Learning	57.8%
Total	100%

**Item No. 11: Interaction and communication with teachers (Providing personalized/ Group Feedback, guidance/tutoring).**

It is evident from table 11 below, that students have varying opinion regarding interaction and communication with teachers. Most of the students had good interaction in terms of personalised or group feedback and guidance or tutoring.

Table 11: Interaction and communication with teachers (Providing personalized/ Group Feedback, guidance/tutoring)

Interaction & Communication	Percentage
Very Good	15.6%
Good	48.9%
Neutral	25.6%
Bad	5.2%
Very Bad	4.7%
Total	100%

**Item No. 12: Interaction and communication with teachers (teaching courses, seminars, laboratories, and other practical application).**

Students have different opinions as evident from table 12 below where majority of the respondents agreed as having good interaction and communication with teachers (teaching courses, seminars, laboratories, and other practical application).

Table 12: Interaction and communication with teachers (teaching courses, seminars, laboratories, and other practical application)

Interaction & Communication	Percentage
Very Good	7.8%
Good	48.9%
Neutral	26.7%
Bad	13.3%
Very Bad	3.3%
Total	100%



**Item No. 13: Quality of online learning content (Courses, multimedia content, audio, audio-visual etc)**

Following is the level of satisfaction of students regarding quality of online learning as depicted in below table 13:

Table 13: Quality of online learning content

Level of satisfaction	Percentage
Very Good	7.8%
Good	53.3%
Neutral	27.8%
Bad	7.8%
Very Bad	3.3%
Total	100%

**Item No. 14: Motivation to learn**

The level of motivation to learn in the students is illustrated in table 14 where it is observed that 12.2% students are very highly motivated, 43.3% are highly motivated, and 31.3% are neutral. The students with low and very low motivated are 8.9% and 4.3% respectively.

Table 14: Motivation to learn

Level of motivation	Percentage
Very high	12.2%
High	43.3%
Neutral	31.3%
Low	8.9%
Very low	4.3%
Total	100%

**Item No. 15: Awareness level regarding the digital initiatives which support students during the pandemic.**

It is observed from below table 15 that awareness level of 64.4% students are medium/moderate, 22.2% students are highly aware and 13.3% have low awareness regarding various digital initiatives such as National Digital Library of India, Information and Library Network (INFLIBNET), etc.

Table 15: Awareness regarding digital initiatives

Awareness level	Percentage
High	22.2%
Moderate	64.5%
Low	13.3%
Total	100%

**Item No. 16: Students' opinion on online education considering the experience during Covid-19 Pandemic.**

It can be observed from table 16 that 48.9% students have positive opinion while 24.4% students have negative opinion. Those with no opinion are 26.7%.

Table 16: Students' opinion on online education

Opinion	Percentage
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Positive	48.9%
Negative	24.4%
No Opinion	26.7%
Total	100%

**Item No. 17: Satisfaction with present way of teaching (i.e online mode)**

It is found from below table 17 that 55.6 % of the students are not satisfied while 44.4% are satisfied with present way of teaching i.e. online mode of teaching rather than offline classes.

Table 17: Satisfaction with present way of teaching

Satisfaction	Percentage
Yes	44.4%
No	55.6%
Total	100%

**Item No. 18: Reasons behind dissatisfaction with online mode of teaching (multiple responses accepted)**

The various reasons behind dissatisfaction among the students are depicted in table 18. The reasons are lack of communication (23.3%), inadequate study material (28.9%), network problem (52.2%) lack of guidance (28.9%) and some other (17.8%).

Table 18: Reasons behind dissatisfaction

Reason	Percentage
Lack of Communication	23.3%
Inadequate Study Material	28.9%
Network Problem	52.2%
Lack of Guidance	28.9%
Some other reason	17.8

**Item No. 19: Advantages of online education (Multiple responses accepted)**

The various advantages associated with online learning as indicated by the students are given in table 19.

Table 19: Advantages of online learning/education

Advantages	Percentage (%)
Flexibility	32.2%
Innovative and Engaging	21.1%
Innovative teaching Learning	26.7%
Improved digital skills	58.9%
Innovative ways of assessing students	12.2%

**Item No. 20: Disadvantage of online education (Multiple responses accepted)**

The various disadvantages of online education as perceived by the students are given in below table 20:

Table 20: Disadvantages of online learning/education

Disadvantages	Percentage (%)
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Need of good internet connection and equipment	37.8%
Deterioration of mental health	32.2%
Inability to carry out practical application	33.3%
Less face to face interaction	43.3%
More distraction for students	30%
Lack of motivation	36.7%

### 5.1 Findings of the study:

The followings main findings are drawn on the basis of study:

1. Majority of the respondents are undergraduate and postgraduate students (47.8% and 44.4% respectively). The age group of most respondents is 18-24 years (66.7%). The respondents are mostly females (77.8%).

2. Majority (47.8%) of the respondents feel that there is a good possibility to connect to the internet.

3. Majority of the respondents (52.2%) have good ability to handle digital platforms required for online classes.

4. Majority of the respondents (50%) have found the efficiency of digital platforms to be good.

5. Majority of the respondents have encountered difficulties like connection issues, unsuitable learning environment and power cut while using online learning platforms.

6. Majority of the respondents mostly relied on online databases (60%), search engines (32.2%), e-books (20%) and references (18.9%) for accessing information during covid-19 pandemic.

7. Majority of the respondents (56.6%) have found the extent of getting desired information with available resources during covid-19 to be medium.

8. Majority of the respondents (64.4%) have spent an average of 1-3 hours of time in information gathering.

9. Majority of the students (58.9%) have joined online courses during covid-19 pandemic.

10. The most important characteristic learnt by students during covid-19 pandemic is Self-learning.

11. Majority of the respondents (48.9%) have found the interaction and communication with

teachers while learning during COVID-19 providing personalized/ group feedback, guidance/tutoring to be good.

12. Majority of the respondents (48.9%) have found the interaction and communication with teachers in terms of teaching courses, seminars, laboratories, and other practical application to be also good.

13. Majority of the respondents (53.3%) are of the view that quality of online learning content is good.

14. Majority of the respondents (43.3%) have found the level of motivation to learn to be high.

15. Majority of the respondents (64.4%) are moderately aware regarding digital initiatives supporting students in learning during Covid-19 pandemic

16. Majority of the respondents (48.9%) have positive opinion regarding online education considering the experience during covid-19 pandemic.

17. Majority of the respondents (55.6%) are not satisfied with present way of teaching (Online learning).

18. The major reasons behind dissatisfaction among the students are found to be lack of communication (23.3%), inadequate study material (28.9%), network problem (52.2%), lack of guidance (28.9%) and some other reasons (17.8%).

19. The major advantages associated with online learning as indicated by students are improved digital skills (58.9%) and greater flexibility (32.2%)

20. The major disadvantages associated with online learning as indicated by students are less face to face interaction (43.3%) and lack of good internet connection and equipment (37.8%).

## 5.2 Suggestions for overcoming difficulties faced by students during Covid-19 Pandemic

1. Sudden switching for online education mode may not be able to host large scale of new users. The platform may often shutdown because of overload. Thus, gradual upload of teaching videos in online platforms can be adopted such that sessions can be viewed multiple times as and when they are accessible.

2. As students faced difficulties while using online platforms like connection issues, power cuts etc. so internet connectivity should be addressed. Government should take measures for developing infrastructural modifications like open Wi-Fi areas with high-speed internet access with at least one GB data pack per day.

3. Government must provide un-interrupted power supply to facilitate ease of online education.

4. Government should take measures to provide help to students who lack digital equipments required for learning during COVID pandemic.

5. Government should develop creative strategies to ensure that all children must have sustainable access to learning during COVID pandemic.

6. As it has been evident from the study that students are facing difficulty in gathering information online, so students should be given proper guidance by concerned teachers regarding the use of various databases, online repositories, digital media, e-books, digital libraries etc.

7. There is a need to invest on remote labs and virtual labs to impart training to students.

8. Students should be given knowledge and should be made aware about the initiatives of government of India during COVID-19 pandemic i.e. Swayamprabha, Swayam, e-PG pathshala etc.

## 5.3 Educational Implications

1. The study is very useful in addressing and the educational needs of students during this COVID-19 pandemic.

2. This study helps in finding out the difficulties faced by students during this COVID pandemic and provides scope for betterment in future.

3. In Today's world, each and every person wants a digital life. So online classes can help students to learn things visually and they can easily remember the things that they have learnt.

4. The conduct of online classes during COVID pandemic also improves the technical skills of students. They can learn to handle different learning management systems and programs.

5. Online learning makes it convenient for students to learn according to their own pace and swiftness. This means students can go through a video 5-10 times if they require learning the concept.

6. Online courses should be made dynamic, interesting and interactive.

7. Personal attention should be provided to students so that they can easily adapt to learning environment. Social media applications are a useful way to support student-teacher communication.

8. Pandemic has also taught us that students must possess certain skills of problem solving, critical thinking and most importantly adaptability to survive the crisis.

## 5.4 Suggestions for further studies:

Research in any branch of human knowledge is never a closed success. In every research work there is always scope for improvement. Every investigation is contributing for further studies. Every investigator after completing his piece of research inevitably becomes aware of areas in which further research is needed and naturally feels motivated to indicate are, which may taken up for research by other investigations. The present investigation also opens new areas which need exploration. The following suggestions are presented for further study:

1. The present study was limited to small sample size so it will be replicated with larger sample size which would be helpful in drawing more valid and reliable result.
2. The present study was confined to students of University of Jammu only. Hence some other universities can be taken for study.
3. The present study was limited to impact of COVID 19 pandemic on education

of students only including opportunities, barriers and outcomes. It can include others aspects like psychological, physiological, emotional aspects too.

4. The present study was conducted using quantitative approach only. It can be conducted using qualitative approach also.

## References

1. Bains, S., Sharma, P., Rani, N. & Dhar, M. (2020). Study Pattern among the Students/Scholars of the University of Jammu during the COVID-19 Phase: A Case Study. *Vidyabharati International Interdisciplinary Research Journal (Special Issue)*, 50-56.
2. Bonnel, W. (2008). Improving feedback to students in online courses. *Nursing Education Perspectives*, 29(5), 290-294.
3. Chaturvedi, K., Vishwakarma, D. K., & Singh, N. (2021). COVID-19 and its impact on education, social life and mental health of students: A survey. *Children and youth services review*, 121, 105866. <https://doi.org/10.1016/j.chilyouth.2020.105866>
4. Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crises. *Journal of Educational Technology*, 49(1), 5–22. <https://doi.org/10.1177/0047239520934018>
5. Grubic, N., Badovinac, S., & Johri, A.M. (2020). Student mental health in the midst of the COVID-19 pandemic: A call for further research and immediate solutions. *International Journal of Social Psychiatry*, 66(5), 517-518. doi:10.1177/0020764020925108
6. Jena, P.K. (2020). Challenges and opportunities created by Covid-19: A case study by IGNOU. *International Journal for innovative research in multidisciplinary field*, 6(5), 217-222.
7. Kuhfeld, M., Soland, J., Tarasawa, B., Johnson, A., Ruzek, E., & Liu, J. (2020). Projecting the Potential Impact of COVID-19 School Closures on Academic Achievement. *Educational Researcher*, 49(8), 549-565. doi:10.3102/0013189X20965918
8. Lone, A.Z. (2017). Impact of online education in India. *IJESC*, 7(7), 13950-13952
9. Misra, K. (2020). Covid-19: Impact of Covid-19 on education retrieved on May 25, 2020 from <https://www.indiatoday.in/education>
10. MHRD Notice (20, March 2020) Covid-19 Stay Safe: Digital initiatives. Retrieved on 25 May 2020 from <https://www.mohfw.gov.in/pdfcovid19.pdf>
11. Pokhrel, S., & Chhetri, R. (2021). A Literature Review on Impact of COVID-19 Pandemic on Teaching and Learning. *Higher Education for the Future*, 8(1), 133–141. <https://doi.org/10.1177/2347631120983481>
12. Rawal, M. (2021). An analysis of COVID-19 Impacts on Indian Education System. *Educational Resurgence Journal*, 2(5), 35-40.
13. Ravichandran, S.P., Palanichami, M.K., Kalaiselvan, K.K., Muthukumar, A., Mahalingam, G. (2020) Psychological impact of COVID-19 lock-down on college students across India- a cross sectional study. *International Journal of Community Medicine and Public Health*, 7(12), 4917-26.
14. Saxena, K. (2020). Coronavirus accelerates pace of digital education in India. EDII Institutional Repository