

**THE RISE OF ONLINE LEARNING AMONG THE UNIVERSITY STUDENTS DURING COVID IN CHENNAI: OPTIMIZING THE TRADEOFF BETWEEN STUDENT'S HEALTH AND LEARNING**

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**ABSTRACT**

*The Covid19 pandemic has transformed the entire system of education from being class room oriented to completely technology dependent. In India, online education's or learning platform's Compounded Annual Growth Rate has been estimated as USD 1.96 billion by KPMG (KLYNVELD PEAT MARWICK GOERDELER). The educational institutions across the globe were shut down for several months and have been conducting classes through digital platform for their students due to various restrictions imposed by the government. The online system of education has imposed varied challenges on the educators and the students. While online learning is flexible, time-saving and facilitates use of technology with creativity, it is not free from draw backs. Accessibility, affordability, infrastructure and attitude of the students towards online system of education are primary challenges to digital learning. The primary objective of this study is to understand the students' perception towards online classes and identify their needs and challenges faced by them and their satisfaction with respect to various attributes of online learning. The study is based on the data obtained from the students of one of the predominant catholic minority institutions in the city of Chennai, India. Information about various aspects of online education have been collected from students of various departments of the institution through a structured google form questionnaire. The study also enumerates the usage of technology before and during the pandemic. The infrastructure available to the students, accessibility and various technical difficulties faced by them have also been explored in this study. A factor analysis has been carried out to classify the factors influencing students' satisfaction. An ordinal regression has been used to establish the relationship between students' attitude towards online learning, their perception, health effects and their level of satisfaction. The study also explores the association between several factors influencing the effectiveness of online learning. While many institutions of higher education are at present struggling to deliver effective online learning experience to their students, the study throws light on various challenges that hinder effectiveness of online education. Based on the responses from the students, the study proposes some initiatives that could be implemented in the online learning environment for effective learning outcomes.*

**Keywords:** *Online learning, Educational outcome, Students' satisfaction, Perception, Attitude, Challenges, Effective learning.*

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## **Introduction**

The COVID -19 pandemic has brought in several innovations in the educational sector. While it initially imposed a great challenge to the sector across the globe, virtual education has come to provide a helping hand. The Online Education system has provided students a wide range of choices, independence, option of blended learning, learning flexibility, multimedia and open educational resources. Students can access a variety of content, from multiple sources available in web sites and can choose based on their areas of interest, and even sources of accreditation. The blended or hybrid learning where classroom time is reduced with substantial time being used for online learning, makes learners ask questions, and broaden the learner horizon for the course content. However, students have modern technology difficulties ranging from accessibility to technology, internet connection, technical know - how, downloading errors, issues with installation, login problems, problems with audio and video, and so on. At times students also face several health-related issues due to online education. Students are also tempted to commit academic fraud in online examinations, that could risk their qualification, skills and their ethical behaviors. Therefore, efforts should be made to humanize the learning process in an effective manner.

The study offers practical insights for educators and universities seeking to use online platform for higher education. This study can further contribute to academic research with respect to challenges faced by the students during pandemic due to online education system, by revealing students' perceptions and motivations. A broad understanding of students' views on the use of online platforms may also be a step forward in understanding the relationship between use of technology and important educational outcomes such as assessment, ethical behavior, student participation and health issues. It is also essential to assess the usability of commonly applied tools for online education delivery, especially since the education delivery mode has switched to online solely in recent times. As a result, the adaptability and the utility of learning technologies has become a key factor in ensuring that online learning is effective and valuable for students.

## **Objectives of the study**

- I. To analyze the students' perception and attitude towards online education and challenges faced by them.
- II. To enumerate the difference in usage of technology before and during the pandemic.
- III. To identify the factors influencing students' satisfaction with online classes.
- IV. To examine the effects of online education on students' health.

The study by analyzing students' perception and attitude towards online classes and the challenges faced by them would enable implementing strategies to improve their satisfaction with online classes. That would be a step forward in making online learning effective and efficient.

## **Review of Literature**

(Gopal et al., 2021) in their study have attempted to determine the characteristics that influences students' satisfaction and performance in online classes during the COVID-19 pandemic period and the relationship that links all these variables. The data which came from 544 respondents who were enrolled in business management (B.B.A. or M.B.A.) or hotel management courses at Indian universities and completed an online survey. The data was examined using a structural equation modelling. The findings demonstrated that the four independent criteria included in the study, namely teacher quality, course design, rapid feedback, and student expectation, have a beneficial impact on students' satisfaction.

R.K Krsihnan (2020) in his study speaks about numerous breakthroughs and trend setters in the new paradigm. The challenges discussed in this study includes the ongoing generation of new knowledge, technology tools, and applications for learning in the virtual world, as well as the analysis, evaluation, and implementation of that knowledge as needed. The second problem is self directed learning, greater peer learning, and a focus on symmetrical and asymmetrical learning methods. Critical thinking, independent-deep learning methods, and the use of technology are few of the attributes that the students use to build their talents. Finally, the study concludes with the fact that teachers/ facilitators should entail instructing students with the ability to regulate their own learning throughout their lives, so that they can achieve their goals.

(Lemay et al., 2021) studied many aspects of human endeavor that affected online education around the world during pandemic. Students' perceptions of the effectiveness and trustworthiness of

the online learning programme were obtained, which had the highest mean score of (3.77), while problems that students faced during online teaching and learning received the lowest mean score is (3.51). As E-learning is on the rise, more institutions are expected to adopt suitable online platform, offering online courses to an ever-increasing number of students.

(Ayebi-Arthur, 2017) conducted a study to find the impact of seismic activities on education. The study showed that the college became more resilient to online learning after the disaster. Though the technology has helped them to a great extent, respondents opined that only a robust IT infrastructure can help to meet the growing demand.

(Khalil et al., 2020) explored the undergraduate medical students' perceptions regarding the effectiveness of synchronized online learning at Unaizah College of Medicine and Medical Sciences, Qassim University, Saudi Arabia. The study attempts to capture some of the challenges, including methodological, content perception, technical, and behavioral challenges during sessions and online exams. Most of the preclinical students preferred online learning for the upcoming academic years. The study also showed that synchronized online classes were well-accepted by the medical students. This represents significant and promising potential for the future of medical education. The analysis concluded that the principles of online learning model and learning outcomes should be regularly evaluated to monitor its effectiveness.

(Yang & Cornelius, 2004) carried out a study using qualitative methodologies to explore students' impressions of the quality of online education based on their own online learning experiences at two universities and one community college. Three students were subjected to interviews and observations. Various documents, both digital and paper, were gathered. Students' positive and negative experiences were investigated. Those experiences are influenced by a number of factors. The results of this study demonstrated that flexibility, cost-effectiveness, and electronic research are all important factors. Students praised the accessibility to the Internet, as well as the well-designed class interface which helped in achieving efficient learning outcomes.

The use of online platform across the educational setting is on the rise. Subsequently, the body of research on this topic is highly spirited and rising. Recent literature has studied the challenges, preferences and experience associated with the use of online instruments in the classroom, but has not studied student's own views about their satisfaction and attitude towards online learning. Not much research has also been explicitly done to examine the association between students own opinion and their level of satisfaction with online classes. Further, a wide range of other influencing aspects of online education has also not been explored. The present study attempts

to explore students' perceptions and challenges faced by them due to online education and its association with health, infrastructure, ethical behavior and satisfaction level.

### **Research Methodology**

The study is based on a primary survey among the Undergraduate and Post Graduate students in the city of Chennai. The students are from diverse socio-economic backgrounds. Several initiatives have been adopted during the pandemic of Covid 19, to provide online education to the students. The extent to which these initiatives have been successful in reaching out to the student community has been explored in this study. Adhering to the salient features of the study, quantitative variables like family income, usage of data, technology used, amount spent on data package before and during pandemic for online classes have been examined in this study. Further qualitative aspects like student's ethical behaviour, sources of internet data, health aspects, online courses pursued other than regular academic courses, were also examined to find out the interaction between these variables in shaping students' satisfaction with online education.

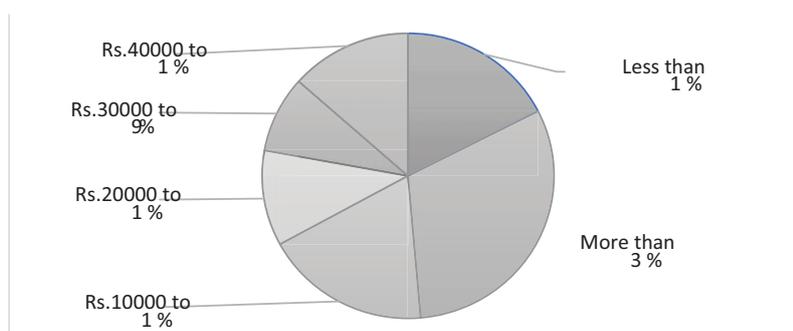
The data has been collected using a structured questionnaire prepared in Google forms, which was circulated to the students across all the institutions in Chennai region. Data collected through Google form questionnaire well suited to achieve the objectives of the study. Students' perceptions towards online education based on their own experiences have been assessed with the help of a Likert's scale. Appropriate statistical tools using SPSS 22.0 has been applied to carry out the analysis. The study gauges the effectiveness of online education and helps in understanding the behavior and attitude of the students towards online learning. It also enables identification of the gaps in existing mechanism and recommends appropriate measures that could be adopted to achieve effective learning outcomes. The study also explores the perceptions and challenges faced by the student in online education. Exploratory factor analysis has been applied to identify the latent factors based on the information collected on various aspects of online learning. An ordinal regression has been used to establish the relationship between students' attitude towards online classes, its health effects as perceived by students, availability of infrastructure essential for online classes and the overall satisfaction of the students with respect to online classes. Satisfaction or dissatisfaction towards one's own experience with a particular product, condition, is a judgement or feeling of an individual which is often used as a tool by psychologists, social scientists, political scientists and marketing experts for various evaluative exercises. Satisfaction judgements and feelings reveal how far the utility has been maximized. Since, utility improvements are associated with welfare

improvements, the present study is a reflection of students' welfare through the lens of students' satisfaction with online classes. The findings would pave way for improving the online learning environment in order to achieve the desired educational outcomes.

## Results and Discussion

The present study was carried out in in the city of Chennai. About 724 students participated in the survey and after elimination of the incomplete responses the analysis has been carried out with 626 responses. 57 percentage of the students were from the Science stream, 29 percentage from the Arts and 14 percentage were from other Vocational streams.

About 70 percentage of the students who had taken the survey are from Urban areas and 17 percentage from rural areas and 13 percentage from Semi-Urban areas. The pie chart below gives the distribution of students by level of income.



**Figure 1 Distribution of students by level of income**

Source: Computed from primary data

The distribution of students by income level indicates diversity of students with respect to their economic backgrounds. While 18 percentage of the students have a family income of less than Rs.10000 per month, about 31 percentage of the students have a family income of more than Rs.50000 per month.

All the students who had taken up the survey have been attending online classes. About 88 percentage of the students have been attending online classes for about 4 to 6 hours per day. About 47 percentage of the students are attending online classes only with mobile phones, about 25 percentage of the students are using laptops for online classes while about 17 percentage of the students use both laptops and smart phones for attending online classes.

Few of them (about 10 percentage) use I Pads, Tabs or Personal Computers for their online classes. Majority (46 percentage) of the students have stated that they consume about one to two GB of data while about 24 percentage of them have stated that they consumer two to three GB data per day for their online classes. About 13 percentage of them have stated that they consume more than four GB per day for online classes. Students who have access to Wi-Fi(about 36 percentage) are observed to have access unlimited data, while those who are using data from their mobile network (about 53 percentage) have only limited availability of data. Only about 8 percentage of the students have access to unlimited mobile data. Very few students are using data dongle with limited and unlimited data plans. Majority (42 percent) of the students using their mobile network for online classes, spend about Rs.300 per month on an average on mobile recharge per month. About 30 percentage of the students are spending about Rs.500 per month on an average. And about 15 percentage of them are spending more than Rs.600 per month towards mobile recharge. Fifty three percentage of the respondents have opined that they have enrolled for other skill development / courses outside college which shows that online education has highly instigated the students to avail online platform to build their capacity.

**Table 1 Paired Sample Test showing difference in amount of mobile recharge before and during the pandemic**

<b>Mobile Recharge (per month)</b>	<b>Mean</b>	<b>SD</b>	<b>t value</b>	<b>p value</b>
Before the Pandemic	270.28	225.19	16.86	0.000**
During the Pandemic	430.65	275.32		

Source: Computed from primary data

**Note:** \*\* indicate significance at 1 percent level.

The table above indicates that there is significant difference (at one percent level) in the average amount of mobile recharge before the pandemic and during the pandemic. The amount spent on mobile recharge during covid-19 is about 60 percent higher than the average amount spent before the pandemic. There has also been a significant increase in the amount spent on Wi-Fi.

**Table 2 Paired Sample Test showing difference in amount spent for Wi-Fi before and during the pandemic.**

<b>Wi-Fi charges (per month)</b>	<b>Mean</b>	<b>SD</b>	<b>t value</b>	<b>p value</b>
Before the Pandemic	458.20	614.11	12.22	0.000**
During the Pandemic	690.02	772.96		

Source: Computed from primary data

**Note:** \*\* indicate significance at 1 percent level.

The table above indicates that the average amount spent on Wi-Fi has also increased during the pandemic and it is significant at 1 percent level. About 68 percentage of the students have stated that their expenditure on internet has increased during the pandemic. The students have also purchased electronic devices for the purpose of attending online classes. About 58 percentage of the students have purchased new mobile phones, 40 percentage of the students have purchased laptops, 15 percentage of them have purchased power banks and few of them have also purchased software and data dongle to support online classes. About 64 percentage of the students have at least two members in the family attending online classes or working from home.

Students are observed to face varied problems with respect to internet connectivity. An analysis of the infrastructure facilities available to students reveal several deficiencies faced by the students. Only about seven percentage of the students have rated their internet connectivity to be excellent, and 48 percent of the students have rated it to be good. Whereas about 20 percent of them have rated it as fair or poor. Although the use of technology has proven a lot of improvement in terms learning and acquiring new knowledge among the students, it can also be limiting, especially to a country like India. Many students in India still face a challenge in terms of access to the computers and internet. Education institutions who aspire to deliver online learnings during such situations, need more understanding on the feasible and possible approaches (Deepika, 2020). Technological issues can widen the student teacher relationship gap which can affect the efficacy of the educational outcome. Lack of standards for quality, quality control, e-content and e-resources delivery needs to be tackled immediately in order to ensure the benefits of quality education via e-learnings. (Cojocariu & Boghian, 2014) To understand the students' perception about online classes and the challenges faced by them, information was collected on about 20 different attributes about online classes and students' opinion about online classes. An exploratory factor analysis has been carried out in order to understand the relationship between the observed variables and latent variables. The results of the factor analysis of the 20 attributes are presented below in the following table:

**Table 3 KMO and Bartlett's Test**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>		<b>0.87</b>
Bartlett's Test of Sphericity	Approx. Chi-Square	5557.749
	Df	190
	Sig.	< 0.001**

Source: Computed from primary data

**Note:** \*\* denotes significance at 1 percent

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in variables that might be caused by underlying factors. The Kaiser-Meyer-Olkin value of 0.87 which is greater than 0.50 indicate that the factor analysis is appropriate to the data (Mishra, 2019). Bartlett's test of Sphericity tests the hypothesis that correlation matrix is an identity matrix, which would indicate that variables are unrelated and therefore unsuitable for structure detection. Since P value is less than 0.01, the hypothesis is rejected and it may be stated that the variables are related.

The table no.4 indicates that four factors have been extracted based on the criterion that only factors with eigen values of one or more should be extracted. The cumulative percentage of variance shows that the five factors, extracted from the 20 variables, together account for 60.622 percent of the total variance. Factor I which is named as “Perception”, which indicates students’ perception about online classes is a combination of ten original variables. Their percentage extraction is 28.679. The subsequent six factors pertaining to the health has an eigen value of 3.189 with percentage extraction of 15.945. The third factor named as “Online Infrastructure” is a combination of three factors with an eigen value of 2.025 and percentage extraction of 10.124 and the fourth factor named as “Connectivity” combination of three factors with an eigen value of 1.175 and a percentage extraction of 5.874.

Post identification of the major factors influencing online learning an ordinal regression has been done to identify the factors affecting overall satisfaction of the students with online classes.

The table no.5 which shows the model fit information shows how well the model fits the data. The model fit is statistically signification as the p-value is lesser than 0.05.

The Nagelkerke Pseudo R square in table no. 6 indicates that 37.3 percentage variation in the overall satisfaction with online classes can be attributed to the independent variables namely the students’ perception about online classes, health effects of online classes, infrastructure and connectivity.

**Table 4 Factor Analysis of the online learning attributes**

<b>Factor</b>	<b>Attributes of online learning</b>	<b>Factor Loading</b>	<b>Eigen Values</b>	<b>Percentage of Variance</b>	<b>Cumulative Percentage</b>
I (Perception)	Online classes are very interesting	0.826	5.736	28.679	28.679
	Online classes are more convenient	0.793			
	Online classes are interactive	0.758			

	Online classes are very effective	0.747			
	Online classes saves time	0.730			
	Online classes are very creative	0.727			
	Online exams /tests are more convenient and easy	0.693			
	Online classes easily accessible	0.677			
II (Health Effects)	Online classes causes back pain	0.754	3.189	15.945	44.624
	Online classes causes neck pain	0.746			
	Online classes causes fatigue	0.745			
	Online classes causes headache & stress	0.725			
	Online classes causes sleeplessness	0.708			
	Online classes causes strain in the eyes	0.692			
III (Online Infrastructure)	I do not have a proper device	0.799			
	Facilities at home are not appropriate for online classes	0.773	2.025	10.124	54.748
	Laptop / mobile is incompatible	0.682			
IV (Connectivity)	I have a poor network	0.812			
	I face call drop or disconnection	0.794	1.175	5.874	60.622
	I face powercuts during online classes	0.551			

Source: Computed from primary data

**Table 5 Model Fit Information**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	1871.086			
Final	1547.778	323.308	4	<.001**

Source: Computed from primary data

**Table 6 Pseudo R-Square**

Cox and Snell	0.330
Nagelkerke	0.373
McFadden	0.186

Source : Computed from primary data

**Table 7 Test of Parallel Lines**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	1130.321	7.983	4	0.092
General	1122.338			

Source: Computed from primary data

The table above tests the proportional odds assumption. Since the significance of the chi-square statistic is greater than 0.05 the proportional odds assumption holds.

**Table 8 Parameter Estimates**

Parameter Estimates		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[Overall Satisfaction=1.00]	0.821	0.619	1.762	1	0.184	-0.391	2.034
	[Overall Satisfaction =2.00]	3.219	0.632	25.930	1	<.001	1.980	4.459
Location	Perception	1.482	0.118	157.471	1	<.001	1.251	1.714
	Health Effects	-0.258	0.110	5.546	1	0.019	-0.473	-0.043
	Infrastructure	-0.147	0.095	2.358	1	0.125	-0.334	0.040
	Connectivity Issues	-0.268	0.107	6.220	1	0.013	-0.478	-0.057

Source: Computed from primary data

The threshold estimate in the table above represents the cut-off value between the different levels of satisfaction stated by the students. The independent variables namely, perception, health effects and connectivity are statistically significant at 5 percent level as indicated by their significance value. However, the infrastructure is observed to be insignificant. The coefficient for perception is 1.482 which indicates that for every one unit increase in the perception level there is a predicted increase of 1.482 in the log odds of achieving a higher level of satisfaction with online classes. Thus, there is an increased probability of a higher level of satisfaction as the perception of students about online classes improves. There is no doubt that massive technological advances in the world, demand a paradigm shift in way we approach our educational goals and aspirations (Ali, 2020).

The coefficient for health effects is negative (-0.258) which indicates that for every unit increase in the health effects there is a predicted decrease of 0.258 in the log odds of being at a higher level of satisfaction. That is, students face health issues due to longer hours of online classes or longer screen time there is a decreased probability of a higher satisfaction from online classes. Instruction, content, motivation, relationships, and mental health are the five important things that an educator must keep in mind while imparting online education (Martin, 2020). Thus health factor plays a vital role in influencing student's satisfaction level towards online education.

The coefficient for connectivity issues is -0.268 which also indicates that for every unit increase in the connectivity issues there is a predicted decrease of 0.268 in the log odds of being at a higher level of satisfaction. Thus, students' perception towards online classes, availability of adequate infrastructure for online classes and connectivity issues are found to significantly affect students' satisfaction with online classes. Students feel that lack of connectivity, technical problems, and difficulties in understanding instructional goals are the major barriers for online learning 12 (Song et al., 2004). Though no significant association was found between the region of residence and connectivity issues faced by students, there is a significant association (at 5 percent level) between connectivity and the source of internet and device used for online classes. While 46 percent of students using Wi-Fi have rated their connectivity as excellent or very good, only 16 percent of the students who use mobile internet have rated their connectivity as excellent or very good. Only 13 percent of the students using Wi-Fi have rated their connection as fair or poor. About 31 percent of the students who use mobile internet have rated their connection as fair or poor. While about 47 percent of the students using laptop or a personal computer have rated the connectivity as excellent or very good, only 25 percent of those using mobile phones for attending online classes have rated

their connectivity as excellent or very good. About 13 percent of students attending online classes using laptop or computers have rated their connectivity as fair or poor, while about 24.2 percent of the students using mobile phones for attending classes have rated their connectivity as fair or poor. The family income was also observed to be a determinant of access to the required online infrastructure for attending classes. While students belonging to higher income group had access to unlimited Wi-Fi and mobile network and favourable infrastructure facilities at home for attending online classes, students in lower income group were more vulnerable to face several issues with respect to network and infrastructure for attending online classes. Thus, there is a need for coordinated efforts from institutions and policy makers to ensure an inclusive online learning environment for the students.

The level of students' satisfaction is also associated with their adherence to digital ethics. Students who observe digital ethics during online classes have reported higher levels of satisfaction than those who resort to unethical behaviors such as putting aside the device after logging in, logging off after answering the attendance, copying or taking help from others during online assessments, not adhering to appropriate dress code, never turning on the video, pretending to have connectivity issues and browsing or messaging during the classes. The table below summarizes the chi-square test results showing the association between aforesaid behaviors and satisfaction levels.

**Table 9 Summary of Chi-square statistic showing association between students' behaviour during online classes and their satisfaction levels with online classes.**

Students' behaviour during online classes	Chi-square statistic	P-Value
I login and put aside the device and do not bother to listen	23.573	0.003*
I log off after answering my attendance	24.968	0.002*
I copy during online tests/ assessments	24.614	0.002*
I take help from others during online tests / assessments	17.982	0.021*
I do not have to be bothered about dress code during online classes as I always turn off my video	17.448	0.026*
I will never turn on my video during online classes	35.426	< 0.001**
I pretend to have connectivity issues if my name is called	14.938	0.060
I keep browsing /messaging or doing other work during online classes	28.779	<0.001**

Source: Computed from primary data

**Note:** \* denotes significance at 5 percent level and \*\* denotes significance at 1 percent level

Barriers like online teaching, social distancing preeminent during this period, may have significant negative effects on learning opportunities. Educational institutes were struggling during the pandemic to find options, ways and means to deal with the unforeseen challenging situation. The present study has synthesised various challenges and its association with the students' satisfaction and attitude towards online education. Students' satisfaction is an essential component for better learning outcomes. Hence, educators, institutions and policies should focus on creating an enabling learning environment keeping in mind the needs and aspirations of the students. The following initiatives have the scope of creating a positive transformation in the attitude of the students towards online learning.

- Identifying students with severe infrastructural deficiencies and providing them the basic infrastructure for online classes at institutional level.
- Redesigning the curriculum to meet the online learning environment. - Introducing activity-based learning.
- Using creative online tools that captures students' attention.
- Revisit the traditional evaluation patterns and conducting creative and interactive assessments that would prevent students from resorting to unethical practices.
- Adopting effective time limits for online classes, to reduce screen time and the resultant health effects.
- Encourage self-paced learning among students.

These initiatives could enhance the students' satisfaction with online classes motivating them for better learning outcomes.

### **Conclusion**

The study has thus explored students' perception about online education as an effective teaching instrument. The qualitative data such as perception of health, attitude towards online classes, challenges in infrastructure and ethical issues has provided deeper insights on how students reciprocate during online classes.

The results divulge the impact of online education and uncovers the interaction effects that provide practical significance. The analysis shows that there has been a significant rise in amount spent on the data network before and during the pandemic.

The study offers an in depth understanding about challenges faced during online class due to infrastructural bottlenecks faced by the students. The relationship between overall satisfaction with online education and health, infrastructure, attitude towards online education reveals that there is an increased probability of higher level of satisfaction as the perception of students about online class improves. Students who are neutral (41 percent) about their satisfaction with online classes indicate that they are not very satisfied with the education received, or they did not perceive that the online education they received is of high quality or standard. Further, when their likeliness towards online education were examined, most of the students opined that they were all eager to switch back to regular classes at institution which indicates that they were either lost, frustrated, or have felt isolated with online mode instruction. The study can be concluded that in the process of ensuring the quality of online education, access to technology, availability of data and learning environment has to be given at most importance.

In order to ensure an effective, interactive, productive and meaningful online program, students must not only know how to cope up with the fast-paced online classes but they also need to have a sound computer and technological skills to learn from online sessions (Martin, 2020). Thus, it is very obvious that improved learning environment can enable students to perform better, because technology becomes an essential part of their environment. On examining students' ethical behavior towards online education and satisfaction level, it can be understood that participants' ethical behavior may have some bearing on how responsible they are to own their own online mode of learning. Students need to be motivated to mould their own behaviors such as to be an enthusiastic learner, and to make effective use of time and technology. While many students are now becoming obsessed with technology, to learn and master their specific subject domain, teachers have a greater responsibility to set time limits and reminders to enhance their creative and analytical skills. The tradition assessment methods should be replaced with more dynamic and participative methods. It may thus be concluded that a paradigm shift towards online education should go hand in hand with the outcome-based learning in this ever-evolving world.

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