

A study on Impact of Coronavirus Pandemic on Indian Education System with references to Maharashtra state.

1. Dr. Anil Jain, Associate Professor, PAHER University, Udaipur
2. Prof. KHUSHBOO Satardekar, Research Scholar, PAHER University, Udaipur

Abstract

Coronavirus Disease (COVID-19) outbreak poses serious concerns to Indian education systems. Efforts to contain COVID-19 prompted unscheduled closure of schools in more than 28 states and 8 union territories, for a total of 36 entities in India. The states and union territories are further subdivided into districts and smaller administrative divisions. COVID-19 school closures left over one billion learners out of school. The study investigates the impact of COVID-19 on education. Data were collected through structured questionnaires administered to 200 respondents that consist of teachers, students, parents, and policy makers selected from two cities in Maharashtra. The collected data were analyzed using STATA. The results show that COVID-19 has adverse effects on education including, learning disruptions, and decreased access to education and research facilities, Job losses and increased student debts. The findings also show that many educators and students relied on technology to ensure continued learning online during the Coronavirus pandemic. However, online education was hindered by poor infrastructures including, network, power, inaccessibility and unavailability issues and poor digital skills. The study underscores the damaging effects of COVID-19 on education sector and the need for all educational institutions, educators, and learners to adopt technology, and improve their digital skills in trends and realities of education in Maharashtra.

Keywords: Coronavirus, Education, School closure, Technology, Virtual learning, Pandemic, Covidiot.

Introduction:-

The recent outbreak of the Coronavirus pandemic increased the gaps in the education sector globally. Though, the Coronavirus pandemic is novel, but it already has noxious effects on humanity. COVID-19 outbreak has created educational disruptions, and global health concerns that proved very difficult to manage by global health systems. As at now, no nation or race across the world is immune from the coronavirus pandemic, and the entire world seems overwhelmed by the speed of the spread and the devastating effects of COVID-19. The coronavirus pandemic has no boundaries, and the effect is large and fast. Just within few months of the outbreak of the disease, it has drastically changed the lifestyles of the entire world with billions of people being forced to 'stay at home', 'observe self-isolations', and work and learn from home. It has limited the freedom of people to move, trade or associate. Not only has COVID-19 caused a total lockdowns in many countries across the world, but it also caused the death of thousands of people including, women, and the elderly. It was more worrisome to know that reports from various continents, including India, America, Africa, Asia, and Europe indicated a daily increase in the number of new cases, and mortality due to COVID-19. As at April, 2020, the number of global COVID-19 cases has surpassed one million cases and more than 220 thousand deaths. India registered the highest single-day COVID-19 deaths at 507 on July with Maharashtra, Delhi and Tamil Nadu accounting for over 70% of the fatalities. Another 18,653 new infections were reported in the country, taking the total tally to 5, 85,493, according to the Union health ministry. This is the fifth consecutive day that coronavirus infections have increased by more than 18,000. The country has seen a surge of 3, 94,958 infections from June 1 till date. The number of active cases stands at 2, 20,114, while 3, 47,978 people have recovered, and one patient has migrated. "Thus, around 59.43% of patients have recovered so far," an official said. The total number of confirmed cases include foreigners. The country had recorded a massive spike of 2,003 deaths on June 17 following a data reconciliation exercise carried out by states and UTs which brought to the fore large number of fatalities previously reported in Maharashtra and Delhi which were not attributed

to COVID-19. It was also frightening that the India recorded more than 507 COVID-19 deaths in a single day despite the country's strong commitment to the fight against the contagion. The number of Coronavirus deaths was soaring with no immediate solutions in sight. The disease showed no sign of slowing down across the globe. The COVID-19 outbreak triggered the President of the United States, President Trump to invoke the "Defense Production Act". The government also issued a national emergency as a result of the growing number of new cases of Coronavirus in the country.

REVIEW OF LITERATURE: In India, The outbreak of COVID-19 affected all aspects of human activities from education, research, sports, entertainment, transportation, worship, social gathering/interactions, economy, businesses, and politics. Indeed, the entire world was in distress as a result of COVID-19 threats, the reality of the situation was challenging to bear, and the education sector remains one of the worst-hit by Coronavirus outbreak.

Monitor (2020) reported that schools and universities across the kingdom were ordered to close down for Coronavirus by the Ministry of Education. The government however, directed that "Virtual schools and distance education be activated to ensure that the educational process continues in an effective and quality manner".

Michael (2020) reported that dozens of independent schools were shutdown at New South Wales while some moved to online classes. Students learn from home, while some schools were opened but implemented strong measures to ensure social distancing strategy. The opening of schools amidst the coronavirus pandemic was backed by the Australian government. The Prime Minister openly announced that schools remained open because the government believes that "children are at very low risk from coronavirus, and the closing of schools could have crippling effects on their health sector and the economy".

Nunzio Quacquarelli (2020) Monitoring the disruption that the coronavirus is causing to prospective international students & latest research can help institutions plan more clearly for the next academic year. The data still suggests that the impact of coronavirus is likely to be an issue of timing, it is therefore vital that universities remain flexible on application deadlines and start dates during this uncertain period. Its priority to provide institutions with the most up-to-date information possible as the situation evolves. It hope that our insights will allow universities to mitigate the worst impacts of the virus on their students and staff as we continue to play our role as a responsible partner to the higher education sector.

ABC News (2020) the government cited solid health case for keeping schools open, but teachers and parents were worried. The country also banned outdoor gathering of more than 2 people, while 18 billion dollars was also approved to mitigate the spread and effects of the Coronavirus. In Italy, schools were shutdown indefinitely, and the military were deployed to help enforce restrictions. However, despite the measures put in place by the government towards curbing the spread of Coronavirus, the country became an epicenter for the outbreak and recorded 969 coronavirus deaths in a single day.

Mathew, and Kristen (2010) that school closure can add stressors to students who are already contending with challenges associated with urban poverty. The finding recognizes the need for technology in education particularly in times of emergencies.

Erika and Nicholas (2020), school closures can either be reactive or proactive. Erika and Nicholas further stated that reactive closing schools occur upon the discovery of coronavirus case among the students, staff or parents. While proactive school closure occurs before the disease even reaches the doors of the school.

Madeline (2020) opined that school closures due to coronavirus has posed new problems like how to make the transition to online and at-home learning, and how to cater for those who rely on school for food and housing security. School closures for coronavirus tends to increase pressures on students, teachers and parents especially those with limited digital skills, education and resources for continued education. It increases the burden on parents to not only struggle to provide for the home, but also to perform the supervision task of ensuring that their children learn from home. Unparalleled school closures increases the pressure on hospitals because they have to cater for as many health situations as possible that ordinarily could have been attended to by school health centers.

Erika and Nicholas (2020) suggested that closing schools are not the only option to mitigate coronavirus. They advocated for authorities to give parents some flexibility to choose what is best for their families, while implementing stronger mitigation measures. However, in contrast to Erika and Nicholas's position, the president of the New South Wales Teachers Federation opposed the opening of schools during the outbreak of coronavirus. He

believed that “the design of their schools and the size of the classrooms makes it impossible” to implement social distancing in schools.

In India, all schools and educational institutions were closed down and the government imposed “Janata” Curfew which restricted all citizens to stay at home to contain the spread of Coronavirus. The police also went round some cities to create public awareness about the pandemic. The decision was largely applauded, and the University Grants Commission (UGC), a regulatory body for all universities in India also gave a follow-up directive to all universities in the country to shut down. The government also suspended social gatherings, and workers were asked to work from home. The untimely closure of schools was good supportive measures to contain the spread of the disease, but it also had some adverse consequences on millions of students globally who were faced with multiple challenges in their education.

OBJECTIVES OF THE STUDY:-

The main objective of the study is to examine the impact of COVID-19 on education. Consequently, the study also investigated the various challenges that hinder continued/online education during the COVID-19 lockdown.

CONCEPTUAL FRAMEWORK:-

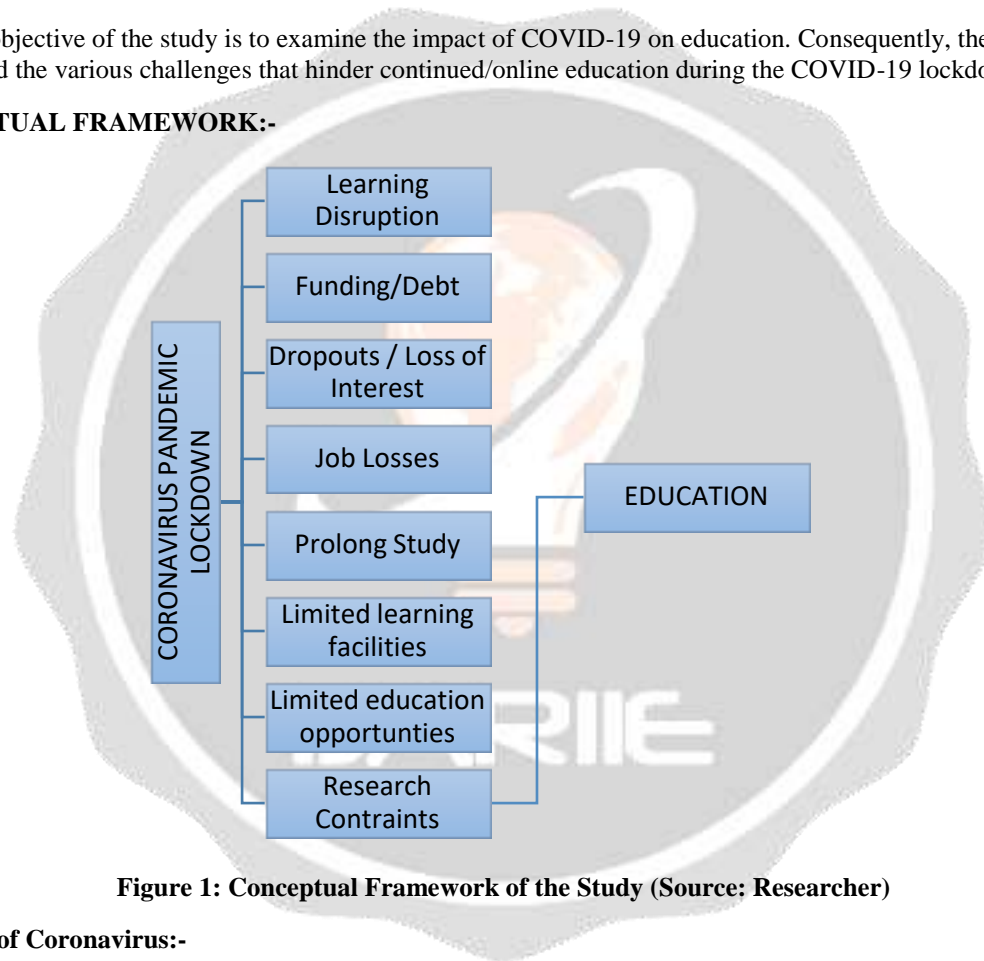


Figure 1: Conceptual Framework of the Study (Source: Researcher)

Overview of Coronavirus:-

Disease Coronavirus Disease is a contagious disease that first emerged in Wuhan, China in 2019. It was later coded “COVID-19” by the W.H.O which stands for Coronavirus Disease 2019. The Coronavirus outbreak remains one of the worst global pandemics for decades. The mortality rate soared and the easy of spread was upsetting. Research shows that older people and those with underlying medical problems like cardiovascular diseases, diabetes, chronic respiratory disease, and cancer were more likely to develop serious illnesses from coronavirus (W.H.O, 2020). Some of the symptoms of Coronavirus include; Sore throat, runny nose, constant coughing/sneezing, breathing difficulty and fatigue.

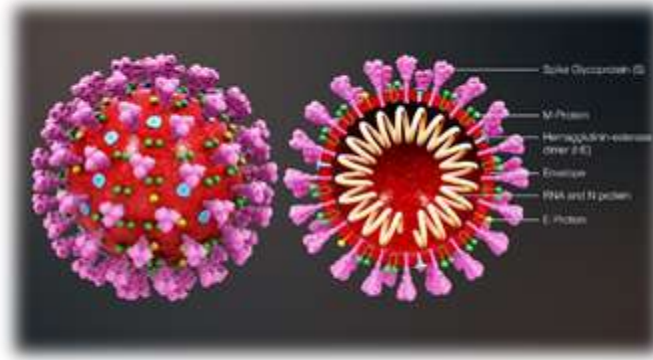


Image 1: Illustration of the Morphology of Coronaviruses; the club-shaped viral spike pelomers, colored red, create the look of a corona surrounding the vision when observed with an electron (Wikipedia, 2020a - SARSCoV-2 without background.png).

As at the time of this study, there were no reliable treatments for Coronavirus, but a series of researches were in the pipeline across the world towards finding a clinical vaccine for the contagion. However, recent events shows that behavioural change can help contain the spread of coronavirus. Some of the suggested measures to halt the coronavirus pandemic include improved individual habits such as personal hygiene, including constant washing of hands with alcohol-based sanitizers, good respiratory attitude (close coughing and sneezing), and other personal protection practices like wearing of face mask, social distancing, avoiding touching of the face, and reducing contacts with people through self-isolation at home or avoiding nonessential travels or gatherings. Coronavirus is a global problem that requires more action coordination and global cooperation to successfully contain the outbreak and to deal with its aftermath effects. The consequences of COVID-19 could be more severe; if people do not comply or adhere strictly to public health regulations and advice.

Global Responses to Coronavirus Pandemic:-

A proactive response is critical to the containment of any disease outbreak, but the coronavirus took the world by surprise and most countries were not prepared initially for the pandemic, including the world powers. Shortly after the outbreak of COVID-19, the World Health Organization (W.H.O) issued guidelines and updates on how to mitigate the spread of the pandemic, and thereafter, many countries adopted different measures in addition to the W.H.O guidelines to contain the spread of the disease. There were lockdowns in most parts of the world, and people were asked to work from home. Some countries even deployed their military to enforce coronavirus restrictions, and to reduce the number of covidots. There were increased demands for health equipment including, protective gowns, sanitizers, face masks and hand gloves. Countries like India, United States and the U.K also opened their visitation doors for medical professionals such as doctors and nurses who were working or willing to treat the effects of COVID-19. Also, large gatherings and sporting activities were suspended at both local and international levels. Big sporting events like the prestigious European Champions League games were played behind closed doors before they were suspended. Global responses to Coronavirus pandemic were varied from country to country, but most countries endorsed the closure of school strategy as a means to contain the spread of COVID-19. Some selected COVID-19 responses across the world closed its borders with some neighboring countries.

Impact of Coronavirus Pandemic on Education

The outbreak of Coronavirus negatively affected educational activities worldwide. The coronavirus pandemic affected educational systems in India & impact of closures of schools. It created serious disruptions in academic activities, as well as in career plans. As part of efforts to combat COVID-19, in India closed down schools in an attempt to contain the coronavirus pandemic. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) monitoring, over 100 countries implemented nationwide closures, impacting over half of the world's student population (UNESCO, 2020a). Even in India, Where Prime Minister Narendra Modi - where admitted "Closing down schools could place further downward pressure on the upward curve of the Coronavirus outbreak" applied in March 2020. Some of the countries that closed down schools due to COVID-19 include, India, USA, South Africa, China, Japan, Iran, France, Spain, Italy, North and South Korea, Vietnam, Thailand, Germany, and South Korea just to mention but a few. School closures carry high social, educational and economic costs, and

the disruptions they cause touch people across communities, but their impact is particularly severe for disadvantaged persons and their families. The disruption caused by COVID-19 in the educational sector may last longer than expected if a more reliable solution for coronavirus is not found on time, and the spread of the disease continues. UNESCO Director-General, Audrey Azoulay cited by VOA News (2020), warned that “the global scale and speed of the educational disruption due to coronavirus is unparalleled and, if prolonged, could threaten the right to education”. No doubts, unplanned school closures can cause severe problems for students, educators, parents and the society at large. It could negatively affect the academic interest and performance of students. If the students are not engaged productively, it could lead to idleness which might result in youth involvement in crimes, loss of interest in learning, and poor academic performance. Maharashtra is leading the country in the prevention of COVID-19, with other States and Union Territories like Delhi setting up field hospitals on the lines of those here, Chief Minister said “Hospitals with all required facilities have been set up in Mumbai and Thane. All this amazing work could be completed because of the hard work of the administration and all related people. The e-launched the 100th COVID-19 testing centre in the State in Mumbai at GT Hospital (JUNE 2020). “Various measures are being taken in Maharashtra to prevent the spread of the novel coronavirus and quality health facilities are being built. The State government has made these facilities a priority to make the health system more efficient,” the Chief Minister said field hospitals have been set up at Bandra Kurla Complex, the NSCI Dome in Worli, and the Goregaon exhibition centre in Mumbai. In Maharashtra expressed concerns about the implications of school closures. According to the CDC, “longer closures may result in more students congregating outside of schools. States that school closing is very controversial, and it can have spillover effects on a large number of students in receiving schools. It can affect the quality of teaching and learning and academic achievement particularly for students with special needs or those with learning difficulties that often requires more physical attention and guidance from the teachers. Though, technology can be used to remedy some of the fallouts from school closures, but it cannot replace the important effect of face-to-face interactions by students and teachers. Besides, many students do not have the necessary access to supportive technologies which makes it harder to maximize the potentials of learning technology during school closures. However, against all odds, mathematical model and empirical analysis of reactive closures of schools in past pandemics indicates that it reduces the total number of cases in the community by 25 percent and postpones the peak of the pandemic by a week or two, while proactive closures of school during pandemics remains one of the most beneficial interventions that can be employed to mitigate the impact of epidemic disease.

Effects of Coronavirus School Closures:-

School closure means the closing down of schools as a result of the pandemic, emergencies, labour strikes, disasters or deliberate efforts to reposition a school or curb crimes in a given campus or environment. This means that school closures are not only for emergencies or pandemics, but also a deliberate way of addressing some identified gaps in a given school. For instance, in India, the government or school authorities often shutdown schools to address security issues such as cultism, terrorism or violent protests on the campus Coronavirus school closures could increase student debt, extend the graduation time of students, and shatter the academic dreams of students, as well as programme schedules of educational institutions. Protracted school closures may result to increase rate of dropouts due to loss of interest and lack of resources to continue. If not well managed, school closures can also increase the rate of crimes, because prolonged school closures can lead to idleness which contributes to negative peer influences and youth involvement in crimes. Education jobs were also affected; many workers risks pay cuts or even disengagement from work during unscheduled school closures.

Some of the harmful effects of school closures for coronavirus are as follows:

1. Interrupted learning: School provides essential learning and when they are closed, students are deprived of opportunities for growth and development.
2. Nutrition: Many youngsters rely on free or discounted meals provided at schools for food and healthy nutrition. This is compromised as a result of school closures for coronavirus.
3. Unequal Access to digital learning portals: lack of access to technology or good internet connectivity for continued learning during school closures.
4. Increased pressure on schools and school system that remain open; Localized school closures place burdens on schools as parents tend redirect their children to open schools.

5. Social Isolation: Considering the fact that educational institutions are hubs for social activity and human interactions, school closures can deprive youth and children of some social communications and socializations that are essential to learning, development and creativity.

Research activities were negatively affected because school closures and lockdowns limit researchers' ability to conduct researches particularly in situations whereby face-to-face interactions with students and teachers are required or access to school facilities or research laboratories were denied. School driven innovations and research are also affected during school closures. To mitigate the effects that accompanied the closures of schools, educators and learners had to rely on use of technological tools and platforms to ensure continued education. Consequently, it is important to admit in the present study that despite the perceived challenges imposed by school closures for coronavirus, the option remains one of the most effective measures to halt the spread of the pandemics.

Technological Therapy for Coronavirus School Closures:-

The unplanned closure of schools for COVID-19 came with obvious implications on the education industry globally even though; the decision to close schools appears to be right considering the need to contain the Coronavirus pandemic. The fortuitous closure of schools worldwide revalidated the need for adoption and deployment of cutting edge technologies in education. The outbreak of COVID-19 increased the global demand for online education. Technology has the potential to facilitate education from any location including home. Thus, as the world struggles to contain COVID-19 or any future outbreaks, the use of educational technology platforms would become the new reality for educational institutions, educators and learners. Technology is integral to student-teacher connection and communication especially in moments of isolations, quarantines, and lockdowns as a result of health crises and other emergencies. Technology is an essential tool to offer educational, psychological, spiritual, and medical advice or supports to parents, educators and students during and after pandemics. Technology aid report of cases, testing and social distancing which are critical to mitigate the spread of COVID-19. In some climes, robots and drones were also used to deliver goods to reduce human interactions. Staying at home all day could be very challenging for students especially the digital millennials who are very mobile and inquisitive in nature. Therefore, with the aid of technology, learners and educators can be productively and educationally engaged to reduce the boredoms that could push them become Covidiot during lockdowns for pandemics. Educational institutions that have inculcated the use of emerging technologies in their systems before the outbreak of COVID-19 had a comparative advantage over those who were yet to embrace technology in their operations. Teachers were required to teach remotely and students needed adjustments to the new teaching and learning techniques. The transition to online education posed a challenge to learners in countries where there were no relevant infrastructures and facilities that facilitate online education. The problem of the digital divide was also a big issue particularly for learners in rural areas. This is because students and teachers in rural areas often lack the needed facilities and expertise to implement remote teaching and learning. While many lacks the required digital skills to implement online education. Technology remains a therapy to bridge the educational gaps that often emanates from unscheduled closure of schools during pandemics.

Concept of Online Education:-

Technology is a key component of education in the 21st century. The increasing use of technology in education modified teachers' methods from the traditional approach that often place them as dispensers of knowledge to a more flexible approach where they act more as facilitators, mentors and motivators to inspire students to participate and learn. Technology facilitates Remote learning, Distance learning, Virtual learning, Blended learning, Mobile learning, Distributed learning, Machine learning, Ubiquitous learning, Deep learning, Cooperative and Collaborative learning. Most aspect of education is going digital, and education stakeholders including students are confronted with the challenge of transition to online education. The use of appropriate educational technologies increases accessibility to learning resources such as Massive Open Online Courses (MOOCs), and multiple learning approaches to meet the need of diverse learners. Online education is a general concept for teaching and learning online with the aid of technology tools and platforms. The success of online education depend on factors including, good internet connections, learning software, digital skills, availability and access to technology. Online education platforms are vital tools that support inclusive education and online learning. Online education has its roots in distance education and the emergence of digital technologies that facilitate the efficient and reliable delivery of lectures, virtual classroom sessions and other instructional materials and activities via the internet (Onlineeducation.com, 2020). With the high penetration of the internet and mobile technologies across the globe,

online education platforms can be maximized to bridge the gaps in education, thereby reducing the rate of global illiteracy.

There are broad ranges of online education tools/platforms that facilitate online education particularly in times of outbreaks like the Coronavirus pandemic.

Some of these technology tools/platforms are listed below:

1. GoToMeeting.com
2. Skype.com
3. Google Classroom/Open Online education (edu.google.com)
4. Youtube.com
5. Blackboard.com
6. udemy.com
7. coursera.org
8. memory.com
9. edx.org
10. easyclass.com
12. TED-Ed (ed.ted.com)
13. Codeacademy.com
14. Stanford Online (Online.stanford.edu)
15. futurelearn.com
16. learnopia.com
17. Teachers pay Teachers (teacherspayteachers.com)
18. openculture.com
19. academicearth.org
20. iTunes Free courses (apps.apple.com)
21. schoology (schoology.com)
22. classdojo (classdojo.com)
23. google hangouts (hangouts.google.com)
24. Zoom (zoom.us)
26. Whatsapp.com

Etc.....

The use of educational technologies facilitates online education, student-teacher interactions, connection and relationships. It enhances teaching and learning experiences, content creation, course sharing, assessments, and feedback. Educators can reach and interact with their students on the go from any location, and lectures can be fixed at any time of convenience. Educators and students can optimize these technologies to supplement classroom teachings, and to improve their digital skills in line with emerging trends in education. More so, knowledge of

technology increases educators' and students' interest, competence, confidence, creativity, employability and output, and also prepares them for the future.

Challenges of Learning from Home:-

The Coronavirus outbreak has forced millions of students to study and learn from home. This is not a new phenomenon because the home has long been epicenters of learning particularly as regards informal education. Learning from home is becoming a new normal for students. The majority of university students still prefer to study in the comfort of their own homes because the learners tend to have everything at their disposal without having to leave their chairs. However, the realities of receiving formal education from home could be very challenging to many educators, learners and parents especially those in developing countries where the accessibility, availability and use of technology in education are not widespread. Apart from the cost of accessing online education, many other factors such as network issues, poor power supply, distractions, poor digital skills, inaccessibility and availability issues can also hinder smooth study from home. There is also the problem of time to learn new technologies that might be required to learn from home, and noises that emanate internally or externally from neighbors and neighbourhood. Because unequal access to technology is another serious concern for many countries, prolonged school closures could deprive millions of students' access to education particularly those in third world countries, rural areas, and people with special needs. UNESCO understood these challenges, and efforts were made by them to help educators and students in the affected countries to teach and learn online from their homes through the provision of free software that facilitates remote education. UNESCO assembled an online guide with links to distance learning apps and other resources to mitigate the effects of school closures for Coronavirus. Students were expected to optimize the Coronavirus mandatory school closures to improve their digital learning skills and home study habits. The challenges imposed by Coronavirus could be transformed into an opportunity by learners to advance their problem solving skills and digital capabilities.

RESEARCH METHODOLOGY

The study carried out a survey design. Research is based on descriptive & causal research. Self-prepared questionnaires were administered to 200 respondents that comprised of educators, students, parents and policy makers selected from different cities of Maharashtra with including Mumbai & Pune through Convenience sampling. Due to the lockdown, the questionnaires were administered online using online survey platform. Also, secondary data were also generated from newspapers, journals, media and reports during the review of literature.

RESULTS AND ANALYSIS

Demographic Information of Respondents

Table 1: Distribution of respondents by Gender

Gender	Frequency	Percentage
Male	120	60
Female	80	40
Total	200	100%

Table 1 above depicts the distribution of respondents by gender. It can be inferred from the table that 60% of the respondents were males while 40% were females. This implies that majority of the respondents were males.

Table 2: Distribution of respondents by educational qualifications.

Educational Qualifications	Frequency	Percentage
Undergraduate	110	55
Post graduates	80	40
Others	10	5
Total	200	100%

Table 2 above shows the distribution of respondents by their educational qualifications. It can be inferred from the table that 55% of the respondents were undergraduates, 40% were postgraduates. While 5% of had other certifications. This implies that majority of the respondents were undergraduates.

Table 3: Distribution of respondents by Designations

Designations	Frequency	Percentage
Educators	80	40
Students	110	55
Others	10	5
Total	200	100

Table 3 above shows the distribution of respondents by designations. It can be inferred from the table that 55% of the respondents were students, 40% were educators. While others were 5% this implies that majority of the respondents were students.

FINDINGS OF THE STUDY:

The study affirms the devastating effects of COVID-19 pandemic on education and the various barriers that hinder students and instructors engagements in online education for continued learning during the COVID-19 lockdown. The results show that educational activities were badly affected due to the COVID-19 pandemic lockdowns. Some of the identified effects include; learning disruption, limited access to learning facilities such as laboratories, job losses in the education sector, increase in students' debts, reduced funding for education, research constraints, and loss of learning interests among learners. The finding is in line that Coronavirus pandemic created multiple problems for education sector leading to decreased education opportunities for underprivileged learners and those in rural areas. Also, from the factor analysis, it was found that Poor digital skills, School policies, Digital divide, Poor electricity, Unavailability and accessibility, Network issues, Inadequate facilities, Lack of training, Lack of funding, Resistance to change, etc. are the major barriers for online education during the COVID-19 pandemic school closures. Among them, inadequate facilities appeared to be the highest impediment to online education during the pandemic. More than 70% of the respondents agreed that inadequate facilities such as lack of computer, internet facility, were the major factors that limited their engagement in online education. Similarly, poor electricity service, unavailability and accessibility issues, network issues, etc. also created lots of problems for education during the COVID-19 lockdown. The result of the study shows that Coronavirus disrupted educational activities and tends to reduce educational opportunities for disadvantaged people. It displaced students and teachers and created multiple barriers in teaching and learning. The study indicates that COVID-19 lockdowns has the tendency to increase school debts and pressure on parents and educational institutions. The school closure can add stressors to students who are already contending with challenges associated with urban poverty.

The finding recognizes the need for technology in education particularly in times of emergencies. The integration of emerging technologies in education is no longer a choice, but a need for all educators considering the changing learning environment, demands for flexibility in methodology, and the need to enhance creativity and innovations in learning. The study would contribute to the growing knowledge on Coronavirus effect on education sector and the need for technology in education.

Conclusion

The study establishes that the Coronavirus pandemic has adverse effects on education. COVID-19 has major effects on school characteristics, including research, academic programmes, Staff professional development and jobs in the academic sector etc. These effects were felt by both educational institutions, educators, students and parents and other stakeholders in education. The study emphasizes the need for adoption of technology in education, as a way to curb the effects of Coronavirus and other future pandemics in education. Thus, the study acknowledges that the decision to shut down schools for Coronavirus across the world may be hurtful, but it is sensible considering the rate of spread, and the dangers imposed by COVID-19 pandemic. The unprecedented school closures for Coronavirus remains a lesson and a warning to the entire educational world particularly those who are yet to embrace or adopt emerging learning technologies that support online or remote education. Stakeholders in the education sector have to develop robust strategies to deal with post-Coronavirus era.

References

Advantages and disadvantages of studying at home | Education Task. (n.d.). Retrieved April 21, 2020, from <https://www.educationtask.com/advantages-and-disadvantages-of-studying-at-home.html>

Adverse consequences of school closures. (n.d.). Retrieved April 21, 2020, from UNESCO website: <https://en.unesco.org/covid19/educationresponse/consequences>

Alvarez, P. (2020, March 13). National emergency: Trump declares coronavirus emergency - CNNPolitics. CNN.Com. Retrieved from <https://edition.cnn.com/2020/03/13/politics/states-coronavirus-fema/index.html>

https://www.researchgate.net/publication/341787426_Impact_of_Coronavirus_Pandemic_on_Education/link/5ed49fe34585152945279a98/download

https://www.who.int/docs/default-source/coronaviruse/key-messages-and-actions-for-covid-19-prevention-and-control-in-schools-march-2020.pdf?sfvrsn=baf81d52_4&gclid=CjwKCAjwgdX4BRB_EiwAg8O8HQpfB_AaT0-xIM7-v_EZCjYctDnpVrFONc930mpr-EA11jdyp9c9MxoCzU4QAvD_BwE

<https://info.qs.com/rs/335-VIN-535/images/The-Impact-of-the-Coronavirus-on-Global-Higher-Education.pdf>

Barranco, J., & Wisler, D. (1999). Validity and systematicity of newspaper data in event analysis. *European Sociological Review*, 15(3), 301–322. <https://doi.org/10.1093/oxfordjournals.esr.a018265>

Brummet, Q. (2014). The effect of school closings on student achievement. *Journal of Public Economics*, 119, 108–124. <https://doi.org/10.1016/j.jpubeco.2014.06.010>

Christakis, E., & Christakis, N. A. (2020, March 16). Coronavirus: Closing the Schools Is Not the Only Option . *The Atlantic* . Retrieved from <https://www.theatlantic.com/ideas/archive/2020/03/coronavirus-closingschools-not-only-option/608056/>

Cliff, N. (1988). The Eigenvalues-Greater-Than-One Rule and the Reliability of Components. *Psychological Bulletin*, 103(2), 276–279. <https://doi.org/10.1037/0033-2909.103.2.276>

Coronavirus. (2020). Retrieved April 21, 2020, from World Health Organization website: https://www.who.int/health-topics/coronavirus#tab=tab_1

<https://abcnews.go.com/International/global-impact-coronavirus-education/story?id=69411738>

COVID-19 Educational Disruption and Response. (2020, March 24). Retrieved April 21, 2020, from UNESCO.org website: <https://en.unesco.org/news/>

<https://thewire.in/health/with-507-covid-19-deaths-in-24-hours-india-sees-highest-single-day-spike>

<https://timesofindia.indiatimes.com/india/highest-single-day-spike-india-records-over-22000-covid-cases-death-toll-rises-to-18655/articleshow/76781263.cms>

covid-19-educational-disruption-and-response Duffy, C., & Ryan, B. (2020, March 19). Why are schools still open in Australia when coronavirus is prompting closures overseas? - ABC News (Australian Broadcasting Corporation). ABC News.