

A Comprehensive Analysis and Impact of Covid-19 on Education System

Dr. K. Vijayalakshmi¹

Assistant Professor, Dept. of Computer Science, S.V. University, Tirupati.

Abstract— COVID-19 pandemic has a devastating effect on many aspects of human life. Throughout the early months of 2020, COVID-19 rapidly changed how the world functioned, with the closure of borders, schools and workplaces, national lockdowns, and the rapid normalization of “self-isolation” and “social distancing”. However, while public education system recommendations were broadly universal, human capacity to accordingly transform everyday life has differed significantly. The access to basic infrastructure is limited, and where overcrowding and high density are the norm, it is frequently impossible to transform daily life in the required ways. The failure of global education system recommendations to recognize these inequalities, and to adapt advice to national and local contexts, reveals significant limitations that extend beyond this specific global pandemic. Education sector is most affected in numerous ways of disciplines are no exception to it. Education has an essential role in human life.

Keywords—Covid-19, Pandemic, Impact on Education System, Online Training, Electrical Devices

Date of Submission: 20-06-2021

Date of Acceptance: 05-07-2021

I. INTRODUCTION

COVID-19, or more popularly known as Novel Corona Virus, is associated with the respiratory disorder in humans which has been declared as a global epidemic and pandemic in the first quarter of the year 2020 by the World Health Organization [1]. Origin and Spread of new corona virus (COVID-19) First case of corona virus (COVID-19) was observed in the Wuhan city of China. Wuhan, Hubei province of China is considered as the origin for the life threatening viral outbreak of Novel COVID-19. Wuhan is the capital city of Hubei province which is also known as the one the major transportation hub in the China started serving the hospitals in their local regions with the pneumonia with unknown causes. The initial was traced with some of common exposures to the wholesale seafood market in Wuhan city which is also known for trading the living animals. After the SARS outbreak surveillance system was activated and respiratory related samples of suspected patients were sent to the labs for the investigations. China notified the outbreak to WHO on December-31, 2019 and on January 1, 2020 seafood market of Huanan was closed till further notice. On January 7, 2020 it is found that corona virus has the >70% homogeneity with SARS-CoV and >95% with the bat corona virus [8].

India reported its first confirmed case on January 30th, 2020 in Kerala state which was an imported case from China in a student who returned from the Wuhan University. The second case was also confirmed on February 2nd, 2020 in Kerala in an individual who was travelling regularly between India and China. The third case in India was also reported in the Kerala in Kasaragod in a patient returned from Wuhan city. As of now these all three patients have been recovered. As of March 21st, 2020 MHFW (Ministry of health and family welfare) has reported 258 cases in India with 4 deaths.

Microbiology of Coronavirus causes the acute and mild upper respiratory infections. Structure of coronavirus is spherical or pleomorphic enveloped particles which contains the single stranded RNA (Mr 6×10^6). In the structure RNA are associated with nucleoprotein [13]. The sub types of the coronavirus are an Alpha, Beta, Gamma and Delta virus which consists of the many serotypes [14]. Not all the coronavirus affect the humans some of them affect to human i.e. 229E-like and OC43-like and some affects the animals such as cats, pigs, mice and birds. Coronavirus are generally found to be mammalian and avian species as they resemble each other in the chemical structure and morphology [15]. There is no evidence till now that coronaviruses in human can be transmitted by the animals.

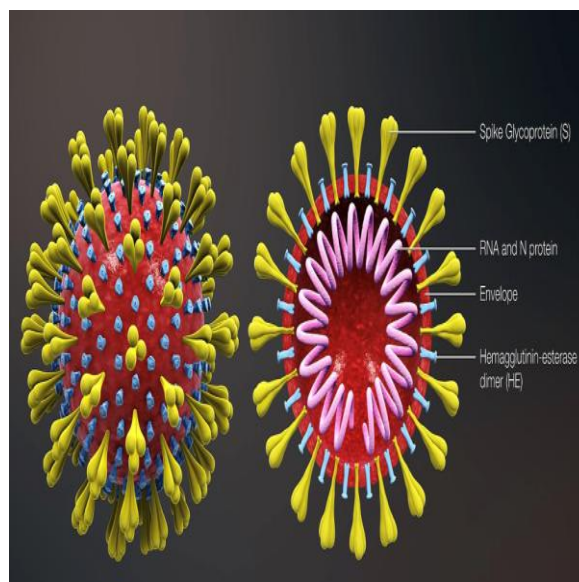


Fig 1: Structure of Covid

India having 244 of total Indian national confirmed cases of COVID-19 in which 39 are foreign nationals and 23 have been cured or migrated with 4 of total deaths. Maharashtra reported most of Indian national cases 60 which is followed by Kerala (33) and Delhi (25) [5]. People suffering with the chronic underlying disease are at higher risks from the infection of COVID-19 which may cause death. An easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it.

II. BACKGROUND

The pandemic caused unprecedented disruption to the provision of education system. Undoubtedly, students training will suffer from the suspension of regular training rotations are affected in many countries. Various education overseers across countries all over the world have come in support of their students. They have given multiple concessions to the requirements to finish their courses as well as providing psychological support. Many academic conferences have also been cancelled or delayed, decreasing the number of offline trainees' learning opportunities.

The deceleration of training is expected to increase emergency and critical administrative unit's capacity by enabling trainees and faculty redeployment to working areas, not usually occupying their daily practice or grade. There has been a strong emphasis on deployed trainees receiving appropriate induction and supervision before they begin unfamiliar roles, ensuring safe practice. The impact of covid-19 is multifaceted, surgical trainees are expected to work in Covid-19 treatment hubs, elective academic classes, conferences, seminars, training programs, placement recruitments are cancelled, academic research activities are interrupted, and there is a safety risk to professionals, the emotional burden due to family isolation, colleagues getting infected or themselves getting infected. Therefore, once the Covid-19 emergency is settled, revision of training programs must be inculcated to reduce the lapses in the education system raised during the crisis is desirable.

III. METHODOLOGY

Many universities and colleges' worldwide suspended classroom teaching due to the novel corona virus pandemic and switched to online teaching. The current study was carried out to analyze the impact of COVID-19 lockdown on the academic performance of students and researchers. Social distancing norms enforced during the pandemic have resulted in an almost complete halt of academic activities but later restarted using various online platforms like Microsoft Teams, Google Meet, Zoop App etc.; nevertheless, completely abandoned activities like live discussions with students on different academic activities.

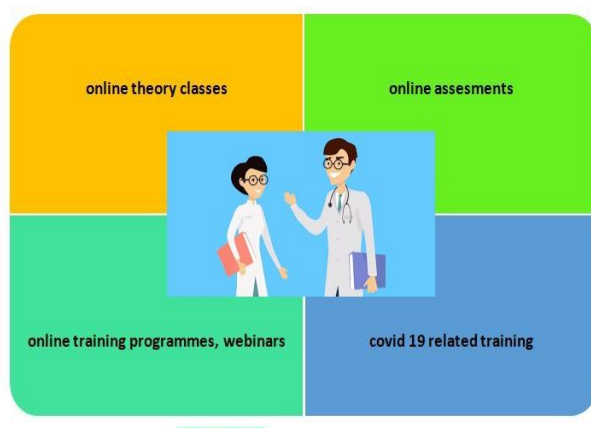


Fig 2: Activities of Online Programme

In the present study, the effect of Covid-19 on Education system, student's academic sessions, and training programs are studied. The data of March 2020-September 2020 is compared to data from March 2019 to September 2019. Surgical discipline is a clinical subject and skill-oriented. To control the pandemic, all departments without any demarcation of specialties are redirected and planned towards covid 19 patients' management. The faculty and students are trained to be able to work in covid wards and treatment of patients. This resulted in a break in all specialties' routine activity, teaching schedules. Newer teaching methods had to be adopted like online classes, case presentations, and even exams conducted via the internet. 19 March: A total of 50% of the students worldwide were affected by school closures, corresponding to nationwide closures in 102 countries and local closures in 11 countries affecting 1 billion people.

Data Collection:

Sample size was calculated to be 250(Approximately) participants as a minimum number of participants (10). Data collection was done using a in different questionnaire orally by person and on phone call. The questionnaire was related to analyse how the students affected at the time of Loack down Closure due to Covid-19.The participants are First year,Second Year,Third year and Ph.D students. The data was tabulated as below

Variables	Greatly Affected	Considerably Affected	Moderately Affected	Affected	Slightly Affected	Not Affected
First Year	87(43.5%)	46(23.0%)	51(25.5%)	24(18.4%)	11(5.5%)	5(2.5%)
Second Year	126(47.0%)	44(16.4%)	68(25.4%)	32(11.3%)	22(8.2%)	8(3.0%)
Third Year	116(49.8%)	54(23.2%)	49(21.0%)	19(9.6%)	10(4.3%)	4(1.7%)
Ph.D Students	20(35.7%)	13(23.3%)	10(21.4%)	4(1.7%)	5(8.9%)	6(10.7%)

Table 1: Students affected at time of Lockdown Closure

Diagrammatically, it can be represented as below

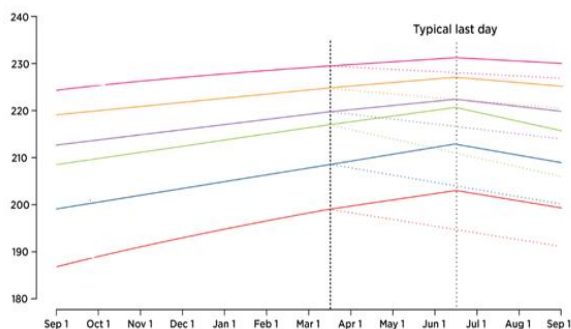


Fig3: COVID-19 Learning Loss : Mathematics Forecast

Meanwhile we also collected and analysed students who attended online classes at the time of Lockdown for the previous academic schedule in a single subject(this is almost similar to remaining subjects also) and questioned for poor attendance, their experiences. Most of the students answered about network issues, their mobile memory space, and financial issues and mainly they are lacking practical knowledge on laboratory subjects especially on sciences. This is also one of the issue that affects online education. So we also considered this issue, tabulated and graphically represented as below.

Date	No. of Students attended
19-04-2021	110
22-04-2021	102
25-04-2021	101
29-04-2021	88
03-05-2021	104
06-05-2021	99
10-05-2021	88
13-05-2021	84
24-05-2021	46
27-05-2021	65
31-05-2021	56
05-06-2021	45
17-05-2021	44
18-05-2021	33
19-05-2021	23
21-05-2021	89
24-05-2021	77
25-05-2021	66
26-05-2021	55
28-05-2021	44
31-05-2021	86
01-06-2021	45
02-06-2021	57
04-06-2021	76
07-06-2021	89
08-06-2021	72

Table2: Students attendance at a particular subject

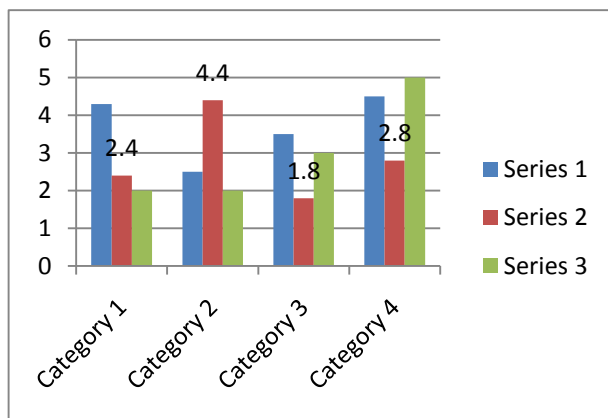


Fig 4: Attendance performance

In this analysis we also concentrated to explore the usage of electrical devices i.e after lockdown to avoid the spreading of Covid-19 among students in University premises. As per GOVT regulations Education department has taken decision to run academic activities online,so with this usage of online exposure of the student was increased. Teaching staff also has to learn to utilize online platforms and the internet for teaching purposes, which is difficult for both students and teachers. And diagrammatically the collected data was represented as below

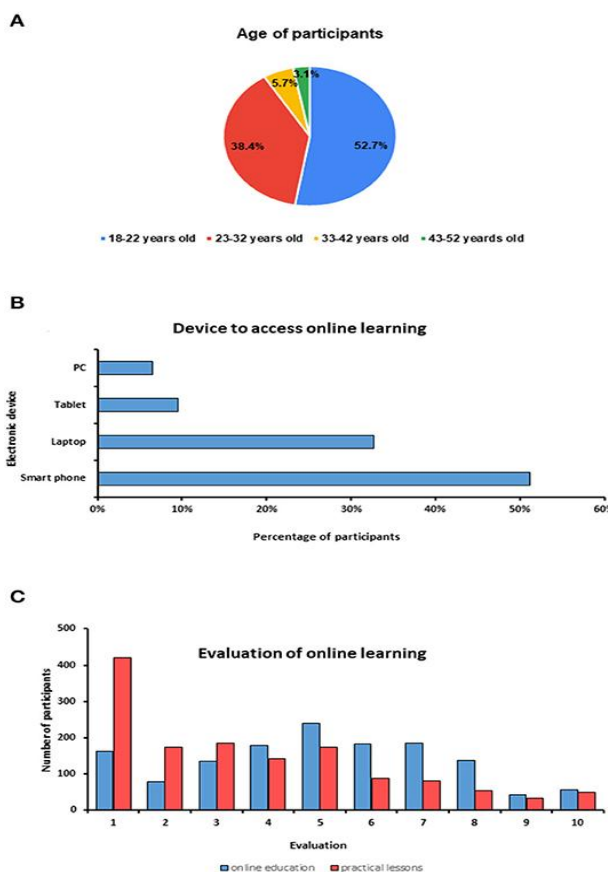


Fig5: COVID-19 ::Usage of Electrical Devices

Covid-19 infection among students also resulted in psychological disturbances. With the above experience, Covid-19 reminded us that we always need to be ready to face problems, be resilient, and continue to fight to save lives. There is a need to plan the infrastructure of all institutes to deal with pandemic at any time. To mitigate these challenges while also building a more resilient system that can withstand future crises, we make three core recommendations as follows: implementing learning recovery programs, protecting education budgets, and preparing for future shocks.

IV. CONCLUSION

Various states of India, Administrative Units of India, Frontline health workforce of India, various researchers and scientist administrative units working together to consider various aspects related to the control of COVID-19 outbreak in their respective regions. This study presented a comprehensive analysis of the COVID-19 outbreak situation in India. COVID-19 pandemic lockdown affected the academic performance of most participants (96.7%) with varying degrees. The mean evaluation score for the online education in general was 5.1 ± 2.4 while that for the practical parts was 3.6 ± 2.6 . Although online education provides an opportunity for self-study, the main challenge that online education faces difficulty to give practical lessons. Since most of the subjects are practical; therefore, it is not easy to learn it online. Online education could be improved by making it more interactive, showing medical procedures in real situations, giving concise information, and providing 3D virtual tools to mimic the real situation. Due to the risk of exposure and spread of Covid-19, observation on usage of Electrical Devices was conducted which leads to a further decrease in practical exposure.

References

- [1]. World Health Organization (2020). Coronavirus disease (COVID-19) Pandemic, WHO. Accessed from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> on 31st March 2020
- [2]. Sohrabi C., Alsafi Z., O'Neill N., Khan M., Kerwan A, Al-Jabir A., Iosifidis C., Agha R. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19) *Int. J. Surg. Lond. Engl.* 2020;76:71–76. doi:10.1016/j.ijsu.2020.02.034.
- [3]. Royal College of Surgeons of England Guidance for surgeons working during the COVID-19 pandemic. 2020. <https://www.rcseng.ac.uk/coronavirus/joint-guidance-for-surgeons-v1/> accessed April 2, 2020.
- [4]. WHO Director-General's opening remarks at the media briefing on COVID-19 - March 11 2020. (<https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>).
- [5]. Al-Jabir A, Kerwan A, Nicola M, et al. Impact of the Coronavirus (COVID-19) pandemic on surgical practice - Part 1. *Int J Surg.* 2020;79:168-179. doi:10.1016/j.ijsu.2020.05.022.
- [6]. Brindle M., Gawande A. Managing COVID-19 in surgical systems. *Ann. Surg.* 2020;1 doi: 10.1097/SLA.0000000000003923.
- [7]. COVIDSurg Collaborative Global guidance for surgical care during the COVID-19 pandemic: surgical care during the COVID-19 pandemic. *Br. J. Surg.* 2020 doi: 10.1002/bjs.11646
- [8]. An Organisation-wide Collaborative Effort to Adapt the EAU Guidelines Recommendations to the COVID-19 Era (2020) <https://uroweb.org/guideline/covid-19-recommendations/> accessed April 18, 2020.
- [9]. NIHR Global Surgery Unit, CovidSurg, Globalsurg <https://globalsurg.org/covidsurg/> (2020) accessed April 15, 2020.
- [10]. Outcomes of Surgery in COVID-19 Infection: International Cohort Study (CovidSurg) (2020) <https://clinicaltrials.gov/ct2/show/NCT04323644> accessed April 15, 2020.
- [11]. World Health Organization (2020). Coronavirus disease (COVID-19) Pandemic, WHO. Accessed from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> on 31st March 2020
- [12]. John Hopkins University (2020). Novel Coronavirus (COVID-19) Cases, provided by JHU CSSE. Accessed from <https://github.com/CSSEGISandData/COVID-19> on 6th April 2020
- [13]. Sharma, N. (2020). India's swiftness in dealing with Covid-19 will decide the world's future, says WHO, Quartz India. Accessed from <https://qz.com/india/1824041/who-says-indias-action-on-coronavirus-critical-for-the-world/> on 25th March 2020
- [14]. Myers, J. (2020). India is now the world's 5th largest economy, World Economic Forum. Accessed from <https://www.weforum.org/agenda/2020/02/india-gdp-economy-growth-france/> on 15th March 2020
- [15]. Google (2020). See how your community is moving around differently due to COVID-19. Accessed from https://www.gstatic.com/covid19/mobility/2020-03-29_IN_Mobility_Report_en.pdf on 6th April 2020.
- [16]. Covid19India.org (2020b). India Covid-19 Tracker 2020. Accessed from https://docs.google.com/spreadsheets/d/e/2PACX1vSc_2y_5N0167wDU38DjDh35ZSIS30rQf7_NYZhtYYGU1jJYT6_kDx4YpFqw0LSIGsBYP8pqM_a1Pd/pubhtml on 7th April 2020
- [17]. Borgatti, S. P. (2005). Centrality and network flow. *Social networks*, 27(1), 55-71.
- [18]. Dwyer, T., Hong, S. H., Koschützki, D., Schreiber, F., & Xu, K. (2006, January). Visual analysis of network centralities. In *Proceedings of the 2006 Asia-Pacific Symposium on Information Visualisation - Volume 60* (pp. 189-197).
- [19]. Aljazeera (2020). India: Coronavirus lockdown sees exodus from cities, Aljazeera News Channel. Accessed from <https://www.aljazeera.com/programmes/newsfeed/2020/04/india-coronavirus-lockdownsees-exodus-cities-200406104405477.html> on 6th April 2020
- [20]. BBC News (2020). Coronavirus: Search for hundreds of people after Delhi prayer meeting, BBC News. Accessed from <https://www.bbc.com/news/world-asia-india-52104753> on 2nd April 2020
- [21]. Biswas, S. (2020). Will coronavirus lockdown cause food shortages in India? BBC News. Accessed from <https://www.bbc.com/news/world-asia-india-52176564> on 7th April 2020
- [22]. Yadav, Y. (2020). India lost more jobs due to coronavirus lockdown than US did during Depression, The Print. Accessed from <https://theprint.in/opinion/india-lost-more-jobs-due-to-coronavirus-lockdown-than-us-did-during-depression/397693/> on 8th April 2020
- [23]. <https://www.worldbank.org/en/news/opinion/2021/04/02/the-impact-of-covid-19-on-education-recommendations-and-opportunities-for-ukraine>
- [24]. <https://www.aplustopper.com/essay-on-online-education>
- [25]. The Impact of COVID-19 Pandemic on the Academic Performance of Veterinary Medical Students” by Mohamed A.A. Mahdy*†, Department of Anatomy and Embryology, Faculty of Veterinary Medicine, South Valley University, Qena, Egypt

Dr. K. Vijayalakshmi. “A Comprehensive Analysis and Impact of Covid-19 on Education System.” *IOSR Journal of Computer Engineering (IOSR-JCE)*, 23(3), 2021, pp. 49-54.