Post Covid-19: How It might Cause Change and Impact the Education in India

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Abstract
The outbreak of corona virus disease (Covid-19) may affect anyone to everyone around the world. All sectors including education sector has been badly affected. It has impacted the over 1.5 million schools and more than 286 million young learners across India. Although the education ecosystem of India, already weighed down by myriad issues such as school dropouts, learning deficiencies, teacher absenteeism, gender disparity and lack of infrastructure, now faces yet another big concurrence to decrease Covid-19 infection as well as to streamline the session, board examinations, entrance tests and admissions. However, an initiation of digital education, internal assessment and previous grade based up-gradation is some of the steps which most of the academic institute or school follows now days. Although, there is certain issue of internet connectivity and availability, only a handful of private schools/institute could adopt e-learning rather than counterpart institute or school either completely or partially closed or simply promoted the students to higher class or grade. This article notably addresses the impacts and possible measures on education and highlights some recommendation to stream the educational activities in Covid-19 era.

Keywords: Covid-19, Institute, Education sector, e-learning, India

INTRODUCTION

The novel nature and unpredictability make disease that jump from animals to humans extremely contagious and pathogenic due to fact that it changes the disease ecosystem as humans are on the top of the tropic level of ecosystem. Covid-19 is such disease caused by novel corona virus named SARS-CoV-2 (A new strain of large family of corona virus) having tiny size of 120 nm with 30 kb genome that threaten to our existence and changed the world as we know it before November 2019 and all off a sudden it outbreak in more than 200 countries. So, the WHO declared it to be global pandemic and recommended global community to take necessary action to follow social distancing, quarantine and isolation as powerful tools to prevent and spread of the virus. Social distancing, quarantine and isolation become the buzzwords of our new existence as deadly Covid-19 crisis has now claimed more than 2,613,060souls in rest and put more than 117,784,274 confirmed cases globally till March 11, 2021, 06:50 GMT (Wordometers, 2021).

We are in the era where falling ill could have fatal consequences and this outbreak may affect anyone to everyone based on the health services and its deliverance to the citizen. The Covid-19 pandemic is exposing and exacerbating inequalities in our vulnerability to global threats at a time

when our country is witnessing it a national health emergency at unprecedented and historic scale. With the current theme to think, while the world struggles to keep a modicum of normalcy, many of us have notice the changing in habits and activities. We are streaming more, more audio-video calling, getting deliveries more, cooking more nutritious foods, adapting working from home/remotely culture, online teaching or learning and keeping cleaning more to stay safe, secure and sound health. Of course, keeping clean is crucial now, more than ever. On the other hand, the ongoing crisis is beyond no doubt, going to affect the entire economy fallout, job loss and homelessness. People already experiencing homelessness are struggling to find a safe place to even wash their hands, through which the corona virus may be spread without the access of sanitation. This is going to severely affect all of us and will definitely change the way we live our lives in this planet. The life is not as it is before November 2019.

The corona virus pandemic has brought the world in general-and the education in particular to a grinding halt. In brief, specific to education; mode of learning, teaching assignment, examination pattern or mode, admission criteria or process guidelines, classroom interaction, selection and recruitment process has either modified or changed but amidst all the havoc, the life must go on while follow the swift actions, guidelines and regulation has been enforced at time to time by the government agency.

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Impact and Possible measures

The world as we know it earlier has changed and there is no looking back due to pandemicity of corona virus as per World Health Organization (WHO, 2020).The future has never felt as uncertain as it is now. This condition could matter more with the progression of Covid-19 into uncharted territory. The landscape ahead is that Covid-19 has affected all the 17 sustainable development goals (SDGs) mentioned by United Nations (United Nations[a]). So, it is high time to analyze, discuss about the reorientation of nature so that it will provide justice not only climate but also other aspects for the better and sustainable earth. Off course, education (SDG$_4$, United Nations[b]) is in its center to achieve entire SDGs agenda which greatly shift now from blackboard to streaming towards a new path for development with the aim of sustainability at its core. The covid-19 poses an unforeseen set of challenges for students, teacher, parents and school across the globe and to education in general. It has been confusing, uncertain and frightening time for students since corona virus sparked the closure of university campuses. Due to this the academic communities around the world have fundamentally changed the way of teaching, learning, studying, examination, interview and interaction. The most important thing is that personal and professional goal is not put on hold due to any adversity. Here I would like to highlight the impact in education due to outbreak of corona virus infection:

   1. As the days pass by with no immediate solution to stop the outbreak of Covid-19, school, college and university closures will not only have a short term impact on continuity of learning for more than 285 million young learners in India but also engender far reaching economic and societal consequences (ET Government & Richa Choudhary, 2020).

2.   The global halt of academic institutes has caused major interruption in student learning, faculty teaching, disruptions in internal assessments and cancellation of external assessments as a part of course curriculum for qualification or their replacement by an inferior or alternative substitute course (Burgess Simon and Sievertsen Hans Henrik, 2020). Some institute could prompt a premature end of semester.

3.   Higher education has been significantly disrupted to perform research which is critically an essential determinant of country's strength.

4.   The bigger concern is that employment/placement of the ongoing or near completed pass out students. There are huge recurrent deficits of jobs that posed a severe threat to long term of financial and academic sustainability. Also, hanger index of its daily wage workers in academic institute is under great pressure for an existential crisis. On the positive side, it has witnessed the reverse migration from urban to rural area to join their parental work/agriculture.

5.   Campus life of the students teaches a lot of new experiences like living away from home, meeting new persons or roommate, adopting new work environment or food or culture difference, managing the time in addition to study, prepare to settle on campus by figuring out what to bring, how to bring, whom to contact in effective and efficient way, handling the odd circumstances to settle and sustain. In the nutshell, campus life prepares the student for life to the life. This physical mental and societal development within the student not only boosts the confidence but also trigger to overcome premature fall out. This physiological and psychological exposure of the students, as well as to faculty, staff, community members and alumni have been completely blocked and so miss the enrichment and enjoyable moment of life. The academic institute or campuses are becoming ghost towns to quarantine the infected person rather than a temple of learning.

6.   Most of the national and international educational gathering for enriching knowledge in the form of seminar, conference, symposium, workshop, FDP (faculty development program), foreign exchange programs andrefresher course has been either cancelled or postponed which not only limit to know the advancement in particular field but also create a resistance for the promotion of faculty if they did not fulfill the requirement of the attending the particular number of FDP/refresher course/workshop.

7.   Experience of racism following the outbreak of corona virus has been reported globally while prompted warning given to institutes/universities. Chinese students are the common victim of increased discrimination of xenophobic abuse at many academic institutes/universities as well in public places. A new slogan "anti-Asian-looking" and the attack against Asian-looking people are deeply rooted for Chinese and Asians in Western cultures and societies (Lau, 2020). However, many institutes are pulling out all the stops to retain and recruit Chinese students. It is self-inflicted wound that many international universities face a viability problem because of the fact that Chinese are the largest community who prefer abroad for studying. Also, students from other community or belonging to hotspot of Covid-19 also felt afraid and terrible that they may be the next one to face the social stigma and forcefully live in isolation.

There is an imperative need to demystify the reality and deployment of initiative to address the key challenges being faced during the tough times of Covid-19 or after Covid-19 in education sector. Covid related effects being experienced by academic institute on ongoing class/programs

or examination and so, many reactive measures being put in place to streamline the session and academic programs. Keeping in mind, many resolve has been initiated to strengthen the need for on ground implementation of digital revolution in this area. Digital revolution deploys several technologies and brings a virtual forum that would cater specifically to academician needs and also offer personalized requirement too. Here are some initiatives for the strengthening the academic calendar in this period:

1. Most governments have ordered institutions to cease face-to-face instruction for most of their students, requiring them to switch, almost overnight, to online teaching and virtual education. This brief note offers pragmatic guidance to teachers, institutional heads and state officials who must manage the educational consequences of this crisis (Daniel, 2020).

2. Anticipated scenarios of Covid-19 over the 6-12 months, working in isolation has been adapted to provide regular update and progression of course curriculum by using one or more than one platform such as academic intranet/internet, internal social media and email by encouraging academician to talk with each other and take class regularly, wherever possible by video conferencing to promote more face to face interaction with an objective *"Together We Will Achieve The Target".*The aim is to ensure that key academic knowledge reach the last mile through resources which can be widely shared through digital platform. This reorient effort would be possible by the strengthening of the broadband connectivity and hassle fee streaming.

3. Many agencies, councils, universities, institutes around the globe including India are looking for new strategies to engage prospective students remotely by launching e-learning courses or credit based training in free or with nominal charges. These e-learning courses (diploma, certificate, skill development courses) will not only prevent academic loss of students but also students can utilize this period effectively by upgrading their skill sets and knowledge. Many of these courses are in general open for all students. However, others are meant specific for particular stream of students. Here, the most important thing is that different students require different needs of course structure or training and special arrangement to deliver the content. Keeping this in mind, central/state governments and private players have undertaken proper initiatives by putting digital India vision (Vision of Digital India, 2015) as an emergence of tools for solving the present crisis for addressing the challenges faced by students, teacher, professional, learner and common man too.

4. The National Mission on Education through Information and Communication Technology (NMEICT), a flagship initiative of Ministry of Human Resource Development (MHRD), Govt. of India has made several arrangements, including online portals and educational channels through direct to home (DTH), television, radios for students to leverage the potential of Information and Communication Technology (ICT) in teaching process by high quality, personalized and interactive knowledge module for all the learner in anytime and anytime mode (Jena, 2020), (MHRD NME-ICT initiatives – UGC, 2020).To avail the maximum benefits, these initiatives are being open accessible and freely downloadable. There are some of the initiative started by the Governmental Agencies or Department namely; (ICT Initiatives of MHRD, Govt. of India, 2020); (National Digital Library of India, 2021); (DIKSHA Digital infrastructure for school education, 2021); (e-Pathshala, 2015) and (e-PG Pathshala, 2014) which is highlighted below (Table 1).

Table 1. Popular Initiative for e-learning by Governmental Agencies or Department

S. No	Initiative taken Respective link	Objective/ Purpose	For Whom	Important Features	References
1	SWAYAM (www.swavam.gov.in)	Online UG/PG courses in all disciplines	Students, Teachers, Professionals, Informal learners	Credit Transfer (for students), career points (for faculty) Certification, No number limit, Available in regional language	MHRD NME-ICT initiatives – UGC (2020)
2	SWAYAM Prabha (www.swayamprabha.gov.in)	32 DTH television channels 24x7 basis, from high school to PG, 4 hours fresh content every day, 5 times repeat telecast Archival in YouTube channel	---do---	Mobile application available and free air telecast	
3	Virtual Labs http://www.vlab.co.in/	An interactive Simulation environment to conduct experiments in various areas of engineering and science	Students in technical institutions	Sharpens application skills and Creative thinking	
4	FOSSEE https://fossee.in/	Promoting use of open source software in educational institutions	Students (technical/ non-technical institutions)	Avoids proprietary software Sharpens application skills Certificates, honoraria, and recognition Employment opportunities	
5	Application of Spoken Tutorial (spoken-tutorial.org)	Provide IT training to a large number of students through self-learning and free/libre and open source software	Students & teachers	Easy to learn Vernacular students and teachers can be trained Online certificates Paid membership	
6	e-Yantra (e-yantra.org) https://www.eyantra.org/	Fun learning competition both for students and teachers like e-Yantra Robotics Competition, e-Yantra Internship Program, e-Yantra Lab Setup Initiative, e-Yantra Ideas Competition e-Yantra Symposium, Embedded Systems using Project Based Learning ("Learning by Doing"), Promotes use of Open Source software through competitions	Students, Teachers, Educational Institutions and Industry	Sharpens application skills Confidence building Team work Creative & Design Online learning resources with certification Industry mentorship and internships opportunities	MHRD NME-ICT initiatives – UGC (2020); ICT Initiatives of MHRD, Govt. of India (2020)

7	National Digital Library of India (NDLI) https://ndl.iitkgp.ac.in/	Digital Library, open to all	Students, Professionals, Teachers, Informal learners of all	Free & full text access to books, articles, journals, video lectures, simulations, questions, solution	MHRD NME-ICT initiatives – UGC (2020); National Digital Library of India (2021)
8	DIKSHA	serve as National Digital Infrastructure for Teachers	Students, Teachers and Parents	In-class resources (video lesson, worksheets, text book and assessment) , Teacher training content, Assessment aids, Teacher profile, News and announcement	Jena, (2020); DIKSHA Digital infrastructure for school education (2021)
9	e-Pathshala https://epathshala.nic.in/	e-learning app developed by National Council of Educational Research and Training (NCERT) in multiple languages	Students (1 to 12), Teachers and Educators Parents	Nearly 1886 audios, 2000 video, 696 e-books and 504 flip books for the 1 to 12 grade students	Jena, (2020); e-Pathshala (2015)
10	e-PG Pathshala https://epgp.inflibnet.ac.in/	A gateway to all curriculum based PG course in social science, arts, fine arts, humanities, natural and mathematical science	PG Students and Faculty	Access e-books (e-Adhyayan), online course (UGC-MOOCs) and study materials (e-Pathya offline access)	Jena, (2020); e-PG Pathshala (2014)

5. Period of closure will be treated as "deemed to be attended" by all the students (University Grants Commission, 2020) and online counseling, admission and examination would be conducted to streamline the academic session. Tune to this current wave of change, recruitment, selection and admission process is navigated by relaxing the mandatory provision to submit/upload the requirement of some of certificates or other norms but there is argue that it is unfair for institute/university to force students to use exam monitoring tools that capture their personal biometric data.

6. Students of class 1 to 8 would be promoted to new class based on the evaluation of internal assessments of the students. However, universities facing difficulty in holding

examination should grade students on the basis of internal assessment/evaluation in current year/semester (50%) and rest 50% can be awarded on the basis of performance in the previous year/semester (University Grants Commission, 2020).

7.   University Grant Commission (UGC) of India has revised the guidelines for forthcoming academic session which generally starts from June/July each year now starts from August in this academic year of 2020-21 to miniaturize the penetration of infection. Academic institute/university may adopt efficient and innovative mode of examination by narrow down the exam time from 3 hours to 2 hours too (University Grants Commission, 2020).

8.   Extension of six months has been granted for the student whom so ever registered in the higher degree course like advanced diploma, M.Phil/PhD. Video conference or any reliable and mutually convenient technology may be used for the conducting of viva-voice examination for the award of said degree (University Grants Commission, 2020).

9.   Also, universities may follow a six-day week pattern and need a devise performa to record travel or stay history of staff and students during the period of closure. This plays a very significant role in controlling the spreading of the Covid-19 pandemic (University Grants Commission, 2020).

10. Although, there is no change or reduction in fellowship amount during this pandemic for all spectrums of students and researcher, it is eye opening fact that people wholeheartedly trust science and research for solution in such pandemic. Doctors and medical practitioner were most trusted one and the scientist are in the second place meaning that research has not been completed halted. It has been shown by sharing results and its scientific explanation for methods and process. German and UK scientist reported that public interest in research and researchers have risen sharply (up to 36%) during the pandemicity of corona virus (Matthews, 2020).

11. Protection of life should take primacy, so proper safeguard measures (using mask, sanitizers, personal protective equipment kit, AarogyaSetu mobile app) should be an extra handholding stuff which would be put in working place to ensure the low incidence of corona infection in academic setup.

12. The cyber world complies with feature of reasonable security practices and procedures (as mandated in section 43A of information technology act (India Code Digital Repository of all Central and State Acts, 2011) would be the future working culture platform for all academician professionals that not only enrich the interpersonal communication skill but also digitally literate them to tackling the digital divide/ trouble shooting. It is in general perception that collaboration and communication has come out to be one of the biggest struggle with working remotely for academician, so this virtual classes will have proven ability to develop technical and analytical skill to translate deliverables course curriculum into valuable and insightful knowledge. Also, they will develop a passion for living in the data era and might be comfortable for rolling up their sleeves to get into the details of the analysis as well as being able to collaborate with many constituents set of needs to take a high-level thought leadership. However, efforts must be made to ensure that data is not being misused by using digital platform. It is important for research and development and for health security of the country that will allow nations and public healthcare systems to fight this virus and protect their citizens.

13. Emergence of new sector, innovation and technologies for the educating is awaiting for the next level that will have power to discover the entire education system (viz., help to conduct virtual class/meeting/summit, deliberate the security feature, products for end to end solution that moves all workflow into digital world and many more other up-gradation) by doing transformation, transaction, deliberation and engagement so that it might deliver the course content and its assessments to strike deeper roots knowledge substantially in adversity or in remote location by capturing the wide spectrum of students as well as academia too.

RECOMMENDATION

Universities are worried about examination despite of the fact that even syllabus is completed or not. This shows how our education system has been evolving. It was never about imparting knowledge but always about exam and its results. The disruption in the delivery of education during adversity is also pushing the government to figure out how to drive engagement at bottom scale to universities while ensuring e-learning, e-book and e-library inclusive online meeting and virtual classroom as a emerging technology that has great enabler capacity to perform any organized activity. This is an apt juncture to start gathering momentum for India's education policies so that it might give massive impact of digital learning at early age as an alternative mode of evaluation for education and make the invisible education system to quite visible during any pandemicity. Hence, further, suggestion/recommendation or policy should be made so that essential right of getting education can be achieved during any climatic or epidemic adversity by narrowing the health risks and adopting the alternative mode of learning or other need of multi-pronged strategy that is necessary to manage the crisis and build a resilient educational ecosystem in a long run. This is the right time to redefine and refine the education policy and its infrastructure which would be projected as education 4.0 as new normal mode of teaching/learning to establish virtual classes. In my opinion, it might be one of criteria to get affiliation of particular institute or university that follows education 4.0.

CONCLUDING REMARK

The world has witnessed of several adversities including Covid-19. So in this unprecedented time, people all around the world are taking necessary steps to protect themselves, their families and communities to prevent the outbreak from the Covid-19. We are now at both a delicate and dangerous phase in this pandemic; the country wide closure of academic institute, business establishment has made it a mandate to work remotely, creating challenges for economy. The global economies are struggling hard to cope with human lives and grass domestic products (GDP). Instead of this adversity, we have noticed how quickly nature gives us back clean air, clean water and blue sky over a sustained period than we have never seen in years. It is for us to seize this opportunity to keep our nature as well as lungs to clean and safe. We all can play our part to make the world a better place to live and achieve the entire 17 SDGs goal keeping education in the center which not only weaponized against adversity but enslaving the impact on rest of the goal.

At present after Covid-19, we are living in a time where educator yearn for a shared purpose and condition that they can actually be associated with halt of academic activity and academic

institute. Hence it has become essential to look for alternative mode of learning as a key outreach pillar against conventional face to face classes and sidelines of educational gathering in conference/ symposium/ seminar/ workshop. So, now virtual classes based on e-learning, e-book, e-library, e-blackboard, e-note book are the streaming platform to address the education called as education 4.0. While the future of the world heavily relies on the merit of technology, it brings in empathy and ethics which lead to a seamless integration of technology into education. This aspect paves the way education of the future that allow student to develop a diverse toolkits to analyze and decode most of the fundamental problem plaguing our societies. Thus innovation in science or broadly in education must be accompanied by an understanding of the human values. It only gains momentum in the long run when investing in an education that not only teaches subject curriculum but also in depth of the science. The concern is that it needs a push to pull out the conventional mode of learning for traditional translation of knowledge. Covid-19 has helped us to see these push by the progress of revolutionized technology to formulate education and scientific knowledge in depth.

In the nutshell, year 2021 or 2022- (a year of hope), may the world emerges from the unprecedented challenges, and problem solving skill will need to be viewed through in interwoven lens where innovation are anchored firmly within a framework of liberal education values. The counting existence of this notion confirms that our academia should not be operating in silos. Both the education and technical bugs within discriminatory algorithms will need to be fixed and utmost to work in harmony for the world of the future where some other bigger challenges are awaiting as one is incomplete without others. In today complex global setting, critical thinking and creativity is imperative for technological advancements in education that also uphold pillar of equity, inclusiveness and diversity.

REFERENCES

Daniel S. J. (2020). Education and the Covid-19 pandemic, Prospects (Paris), 1–6. Advance online publication. https://doi.org/10.1007/s11125-020-09464-3

DIKSHA Digital infrastructure for school education. Retrieved from https://diksha.gov.in/

e-Pathshala. Retrieved from https://epathshala.nic.in/epathshala.php?ln=en

e-PG Pathshala. Retrieved from https://epgp.inflibnet.ac.in/Home

ET Government &RichaChoudhary (2020, April 16) COVID-19 Pandemic: Impact and strategies for education sector in India. Retrieved from https://government.economictimes.indiatimes.com/news/education/covid-19-pandemic-impact-and-strategies-for-education-sector-in-india/75173099

ICT Initiatives of MHRD, Govt. of India (2020). Retrieved from https://vnit.ac.in/wp-content/uploads/2020/02/ICT-Initiatives-of-MHRD-Government-of-India.pdf

India Code Digital Repository of all Central and State Acts (2011, April 11) The Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011). Retrieved from https://upload.indiacode.nic.in/showfile?actid=AC_CEN_45_76_00001_200021_151780 7324077&type=rule&filename=GSR313E_10511(1)_0.pdf

Jena, P.V. (2020, July 30) Impact of Pandemic COVID-19 on Education in India. International Journal of Current Research, Vol-12, Issue-7, pp-12582-12586, DOI- http://journalcra.com/article/impact-pandemic-covid-19-education-india

Lau, J. (2020, March 23) Coronavirus sparks a rising tide of xenophobia worldwide. Retrieved from https://www.timeshighereducation.com/news/coronavirus-sparks-rising-tide-ofxenophobia-worldwide

Matthews, D. (2020, May 7) Public trust in science 'soars following pandemic. Retrieved from https://www.timeshighereducation.com/news/public-trust-science-soars-following-pandemic

MHRD NME-ICT initiatives– UGC (2020, March 12). Retrieved from https://www.ugc.ac.in/pdfnews/9173825_NME-ICT-MHRD.pdf

National Digital Library of India. Retrieved from https://ndl.iitkgp.ac.in/

Simon Burgess, Hans Henrik Sievertsen (2020, April 1) Schools, skills, and learning: The impact of COVID-19 on education. Retrieved fromhttps://voxeu.org/article/impact-covid-19-education 2020

United Nations (a).Department of Economic and Social Affairs Sustainable Development. Retrieved from https://sdgs.un.org/goals

United Nations (b). Department of Economic and Social Affairs Sustainable Development. Retrieved from https://sdgs.un.org/goals/goal4

University Grants Commission (2020, April) UGC Guidelines on Examinations and Academic Calendar for the Universities in View of COVID-19 Pandemic and Subsequent Lockdown. Retrieved from https://www.ugc.ac.in/pdfnews/4276446_UGC-Guidelines-on-Examinations-and-Academic-Calendar.pdf

Vision of Digital India (2015, July 1). Retrieved from https://www.digitalindia.gov.in/content/vision-and-vision-areas

WHO (2020, March 11) WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. Retrieved from https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

Wordometers (2021, March 11). Covid-19 Corona virus Pandemic, Retrieved from https://www.worldometers.info/coronavirus/