COVID-19 PANDEMIC: IMPACT ON EDUCATION SECTOR IN THE FIELD OF SCIENCE

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Abstract- From the day of creation of life on earth, every living being is facing problems/difficulties due to bacterial, viral infections or other diseases and is developing immunity against them. But with the development of Science & Technology and with the growth in the field of Medical science, somehow human has decreased its immunity against pathogens due to the dependency on drugs/medicines each time. The period from December-2019 till today has shown us how human body immunity got failed when corona virus enters the body. Almost all countries faced the issue of COVID-19 pandemic but maximum deaths have been seen in China where people are consuming nearly all animals meat such as snake, pigeon, duck, dog, chicken, pork, beef, mutton etc. and their immunity is not so good. They are not sharing the exact data of deaths due to Corona. Because of this pandemic, education all over the world has suffered a lot. Each and every field of Education such as Commerce, Management, Science, Medical, Engineering, IT and Humanities have been affected by this pandemic. Education is the backbone of any country and corona has attacked it brutally. However the pandemic has opened some new online channels of Education also. We will study the impact of this pandemic on the education in the field of Science by this paper.

Keywords: COVID-19 pandemic, Corona, Meat, Education, Commerce, Management, Science, Medical, Engineering, IT and Humanities.

1 INTRODUCTION

Science has proven to be a boon for human being as well as for other living organisms present over the earth. Humans have used scientific theories and concepts to assist living things in a variety of ways and contexts. Science in particular has several disciplines in the sphere of education, and each branch has been impacted by the COVID-19 pandemic. Even in past many such pandemics/ epidemics like 2002 SARS and 2012 MERS pandemics came and affected the education. Before proceeding towards the impact of COVID-19 pandemic, we must see how education was going on before COVID-19.

1.1 Education before Covid-19

Prior to the pandemic, Offline Education mode was used for teaching in Schools and Colleges. Offline education means a student needs to go in a School, College in a classroom, and attend a class face to face with a teacher. Expressions of both teacher as well as students are visible to each other. Students worked hard to get good grades while completing practical work in a variety of topics, including physics, chemistry, botany, zoology, biotechnology, biochemistry, microbiology, etc. They were also learning the ideas through hands-on experience. By using both theory and practical, teachers assist students in comprehending laboratory-based science topics. Students typically asked questions to get answers to their questions and focused on having a scientific mindset.

1.2 Education after Pandemic:

After COVID-19 pandemic, education in each field has been affected. The negative effects over education in the field of Science are:

- **Practical learning paused:** Due to COVID-19 pandemic, practical learning paused for about two years i.e. from 2020 to 2022. Students ability to learn and ask questions would be much diminished in the absence of practical learning.
- **Understanding of concepts affected:** Students of Science are not taking the study seriously as during corona period they become used to copy the answers during online exams and earned high grades. Practicals were not conducted during corona period and the marks were given on the basis of internal assessment/ previous record etc.
- **Laziness:** Corona period has made laziness a part of life of the students as well as of teachers.

- **Online Education: One way communication:** During corona period, education was imparted online. But it was just like one way communication for teachers to communicate and students were not enjoying really.
- **Lack of Internet Savvy Teachers:** All teachers were not able to take online classes during Corona period. They took time to make them internet savvy and to take online classes that resulted in loss of study of the students.
- **Lack of Smart phones:** During Corona period, online classes started but all students in India and other countries were not having the smart phones that resulted in stress for such students.
  On November-2020, a student of Shri Ram College of Delhi University, resident of Telangana died by suicide and left behind a note, saying that she did not want to be a burden on her family. She was under stress due to lack of smart devices and poor internet connectivity.
- **Unpractical Engineering:** Due to the pandemic, engineers who did not complete any practical training have received their degrees, and we can now predict how these civil engineers and architects will function in the future.
- **Closure of Research laboratories and Research Centers:** Research work was paused for about two years due to this COVID-19 pandemic. Scientists, Research scholars and Professors research was paused due to this outbreak.
- **Lack of Attendance during online classes:** During COVID period, online classes were started via Google meet, Zoom etc. But students attending the classes were found to be very less in number. The students attending the classes were not taking interest and they just attend the online classes for attendance purpose only.

1.3 Advanatges of Online Education in Field of Science:

- **Concept clarity by means of animated videos:** Science subjects like Biology, Chemistry, and Physics can be learned by means of animated videos that are easily available on You-tube.
- **Online education Applications:** Students and teachers both have learned how to use apps like Google meet, Zoom etc.
- **You-tube videos:** Teachers started making their videos and uploaded on their You-tube channels that can be seen by students anytime. So online education is flexible.
- **Career Advancement Opportunities:** Working people can start courses online without taking any leave from their job.
- **Immediate feedback:** In online courses, students can upload their assignment digitally and their teachers can submit feedback rightaway.

1.4 Disadvantages of Online Education:

- **Internet data problem in rural areas:** Proper network coverage is not there in rural areas that affect the education a lot.
- **Smart phones non-availability:** Most of the students belong to poor families and cannot afford smart phones/ laptops etc.
- **Distraction by other sites:** During online education, students are distracted by other websites and this affect the education.
- **Teacher Training:** Teachers also need to be trained to use online education portals and apps.
- **Focus on students lost:** During online classes, every student is not visible and focus on each student is not there.
- **Expressions of students not visible all the time:** Teacher usually notice the expressions of the students and can repeat the concepts in physical mode of teaching. But in online classes, students usually close their cameras due to which teacher cannot get the proper idea whether the students got the concept or not.

2 INITIATIVES OF GOVERNMENT FOR E-LEARNING:

- Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) portal provides integrated platform for online courses

- National Educational Alliance for Technology (NEAT) that use Artificial Intelligence that make the learning easy
- National Programme on Technology Enhanced Learning (NPTEL) is initiated by seven IITs along with IIScBanglore. Its aim is to provide online courses in Engineering, Management and Sciences.
- National Academic Depository works as a store house of all academic awards i.e. certificates, diplomas, degrees, mark sheets etc.

2.1 Top On-Line Courses Available in the Field of Science During and After Corona:

- Covid-19 online course
- Healthcare Professional course
- Artificial Intelligence and Machine Learning
- Cloud computing
- Software development
- Social Psychology
- Data Science
- The Science of Well-being
- Deep Learning
- Learning how to learn: Powerful mental tools to help you master tough subjects
- How to build a website

3 WAY FORWARD:

1. **A multi-pronged approach:**
- Priority must be given to those students who have less access to e-learning
- Strength of students for interaction with a teacher in physical mode should not be very high as it can affect the teaching
2. **Making online education more effective:**
- One way communication by teachers should be avoided
- Teacher should not only be the controller of the class but also be the facilitator for transfer of knowledge to students
3. **Blended mode of learning:**
- The best method of teaching is blended mode of learning whether it's a science subject, arts or commerce subject. Teacher should teach physically in classroom and can provide online material as well to the students for proper revision and understanding of the concepts.
4. **Focusing on motivating the students for concept clarity:**
- Teachers must motivate the students that they should not cram the topics but try to understand the concepts. There should be quality learning and not quantity cramming.
5. **New Education Policy:** This National Education Policy 2020, which aspires to answer the numerous expanding developmental imperatives of our nation, is the first education policy of the twenty-first century. In order to create a new system that is in line with the aspirational goals of 21st-century education, including SDG4, and builds on India's traditions and value systems, this Policy proposes the revision and revamping of all aspects of the educational structure, including its regulation and governance. The development of each person's creative potential is emphasized heavily in the National Education Policy 2020. It is founded on the idea that education must foster the development of higher-order cognitive abilities like critical thinking and problem-solving, as well as the "foundational capacities" of literacy and numeracy.

4 CONCLUSION

Article-16 of the Indian constitution i.e. Equality of Opportunity gives the right to get equal opportunity for education to all. If only some children are getting quality education and others not, then it ruins the very notion of this statement. Covid-19 has impacted education very badly from 2020 to 2022 all over the world. Moreover India is still not so successful in digital education. We have to do a lot of work in providing quality online education with

education in physical mode (Blended ode). Only then our children will be able to compete with the world and fulfill their dreams.

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