

# *Technological revolution in the Educational sector - A post Covid scenario*

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## **ABSTRACT**

Technology plays an essential role to deliver education to the students. It plays a vital role in today's digital economy. In educational sector Information Communication Technology (ICT) provides a platform for distance learning, online learning and certification to enhance additional and intense knowledge. It can shape the educational policies and bring educational revolution. "With the spread of the Coronavirus disease (COVID-19), 180+ countries mandated temporary school closures, leaving 1.6 billion children and youth out of school at its height and affected approximately 85% of children world-wide (world bank)". Education was made to reassess in this new Covid environment to make online teaching easier. The education institutions were made to follow the guidelines and recommendations by government agencies, while keeping students encouraged to continue learning remotely during this tough environment. Children and students have had to dependent on their own resources through the Internet, television or radio. This new weapon of Teaching-Learning refers to the technology that are used to communicate, store, generate, share, exchange valuable knowledge and skills around computing and communications devices. Hence the current paper attempts investigates the technological achievements and advancement in the educational sector after the Covid period. Primary data for about 300 samples from School and college children, teachers and parents are collected. Also secondary data regarding technological advancement is collected from magazines and other published books, simple ratio, percentage method and data visualization technique is used to verify the above objective. The result vividly reveals that the technological advancement was a revolution in the post covid situation.

Key words

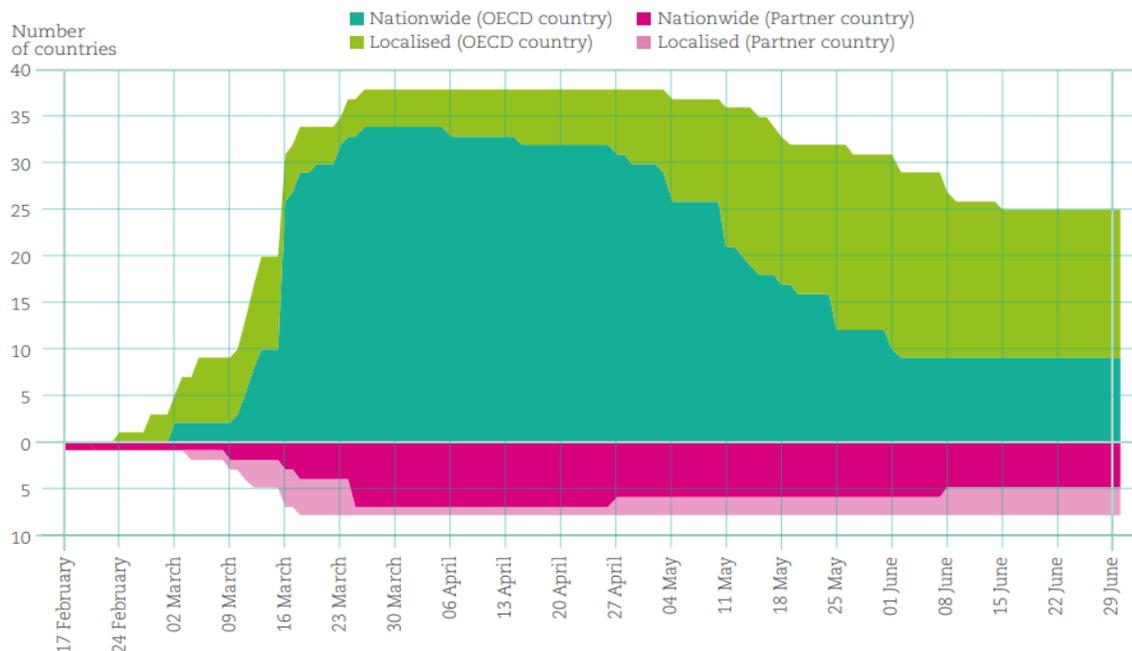
Education, School, technology, COVID, Primary data

### **I. Introduction:**

Education and health are the two backbones of any system. Covid-19 pandemic has affected almost all the sectors of the Economy regardless of nationality, education, income, gender etc. This crisis has led to many shortages and inequalities in our education system, this has transformed many aspects of human lives. Shut down of schools, businesses and workplaces and forced millions to stay at home for extended lengths of time. Government recommended limits on social contact trying to altered the way many worked, learned, connected with loved ones, carried out basic daily tasks along with joy and sorrows. For some, technology played a role in this transformation.

Reduction in family income, limited access to digital resources, and high cost of internet connectivity have disturbed the academic life of the students. Students, Teachers and Parents felt a changes in their daily routine like social distancing, loosing connectivity with the outside world, lack of outdoor activity and complete change in life style called lockdown which had an influence on mental and physical well-being of the individuals. The burden on teachers and parents increased and this had an impact on students.

Graph 1: Number of countries with school closures due to COVID-19 (17 February 2020 and 30 June 2020)



Note: This figure covers educational institutions from early childhood education to tertiary education. Localised school closure refers to school closures of some levels of education only and/or for some subnational entities.  
 Source: UNESCO (2020), COVID-19 educational disruption and response, <https://en.unesco.org/covid19/educationresponse>; Education at a Glance 2020, Figure D1.4.

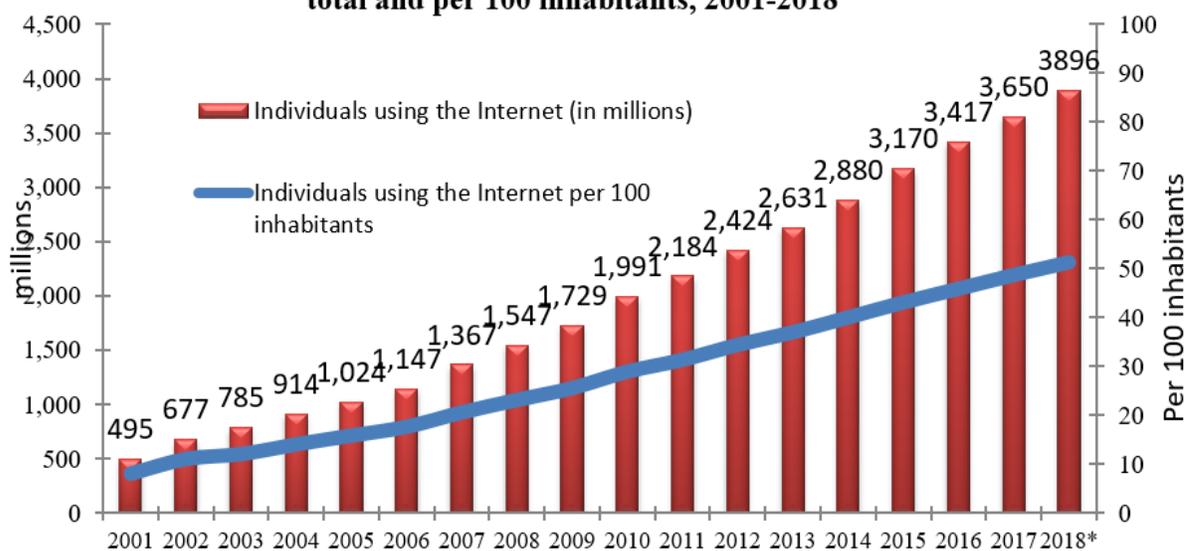
“By the end of June 2020, some degree of school closure was effective for at least 7 weeks in 2 countries (4%), 8-12 weeks in 6 countries (13%), 12-16 weeks in 24 countries (52%), 16-18 weeks in 13 countries (28%) and more than 18 weeks in China”, (UNESCO, 2020). There was need for a rapid transition from physical learning to the digital learning.

In this digitalized world, the digital technology can enable a revolution in this educational sector. A rigorous effort was made by the educationalist to continuity learning during this period, a variety of remote learning resources were suggested. The goal must be (1) real-time lessons on virtual meeting platforms (2) Online support services for parents and students for which teachers also had to familiarize to new educational concepts and modes of delivery of teaching, for which they may not have been trained and finally, (3) online learning has been observed as a possible alternative to traditional learning.

Education was made to reassess in this new Covid environment to make online teaching easier. The education institutions were made to follow the guidelines and recommendations by government agencies, while keeping students encouraged to continue learning remotely during this

tough environment. Children and students have had to dependent on their own resources through the Internet, television or radio. This new weapon of Teaching-Learning refers to the technology that are used to communicate, store, generate, share, exchange valuable knowledge and skills around computing and communications devices. Marginalized groups, who do not have the access to digital learning resources experienced larger negative impact due to Covid-19 outbreak. India has the world’s largest higher education system, about 45,000 higher educational institutions which has increased by four-fold since 2001. However, the National Education Policy 2020 put emphasis on students’ mental health and well-being in order to provide a complete development. Also, it is important to ensuring optimal performance both, in and outside school life. Positive impacts of this online Education can be Collaborative work, virtual meetings, distance learning, digital literacy, e-conferencing, use of electronic media, time management, learning management, use of learning material and its frequency, blended learning and attending the meeting from your comfortable places itself.

**Graph 2: Global numbers of individuals using the Internet, total and per 100 inhabitants, 2001-2018\***

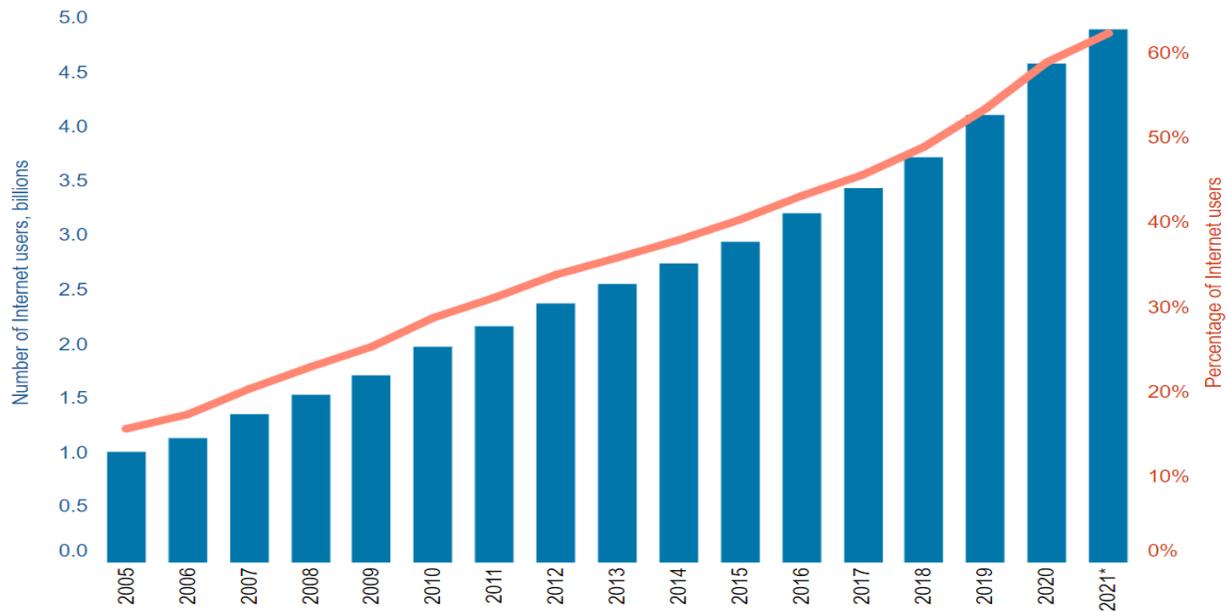


Note: \* Estimate

Source: ITU World Telecommunication /ICT Indicators

Graph 2 presents the percentage Global numbers of Internet users, total and per 100 inhabitants, 2001-2018. The graph clearly reveals that the internet usage has reduced to half of its usage globally, when compared to 2000 and 2018. Graph 3 also reveals the data on usage of Internet by individuals (in Billion) from 2005 to 2021. It is clear from the graph that the Internet has long been a source of countless opportunities for personal satisfaction, professional development and value creation. During the pandemic situation, it has become a vital necessity for working, learning, accessing basic services and keeping in touch. The latest ITU data confirms the uptake of Internet usage during the pandemic. In 2019, 4.1 billion people (or 54 per cent of the world’s population) were using the Internet. Since then the number of users has increased by 782 million individual using Internet has reached 4.9 billion in 2021, or 63 per cent of the population.

Graph 3: Individual using Internet



Source:ITU

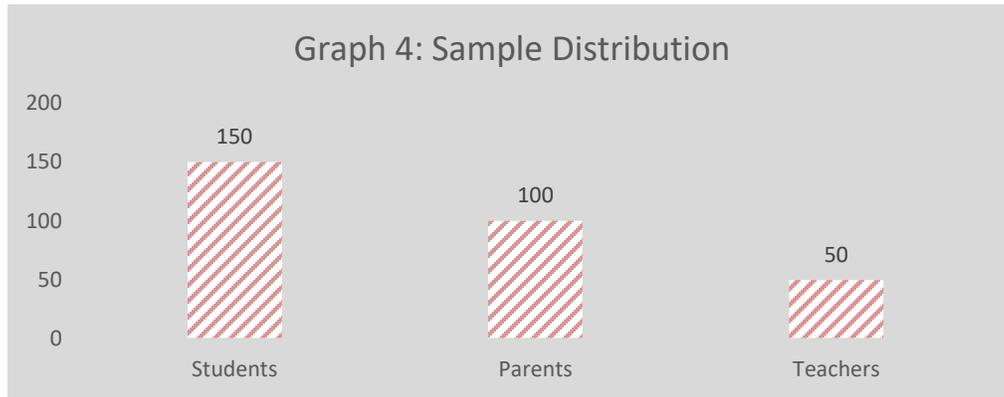
“There were few people living in developing countries who remain offline, due to lack of access that remains unconnected (ITU). In 2020, the first year of the pandemic, the number of Internet users grew by 10.2 per cent, the largest increase in a decade, driven by developing countries where Internet use went up by 13.3 per cent. In 2021, growth has returned to a more modest 5.8 per cent, in line with pre-crisis rates”, ITU. India’s spending for IT sector services was 15.7 per cent in 2017 and reached \$12.6 billion, an increase of 13.8 per cent in 2018 to reach \$14.3 billion after covid it has increased to \$16.35 in 2020 and a further increase to 18.12 in 2021 (Gartner, 2019 and 2022).

National and International studies during the pandemic situation (2020 and 2021) was enormous regarding this impact of COVID-19 on education. Studies by Aucejo et al. 2020, Bao 2020, Cao et al. 2020, Dnan and Anwar 2020, Hasan and Bao 2020, Kapasia et al. 2020, Lee 2020, Mahdy MAA(2020), Odriozola-gonzález et al. 2020, Rahul De et. al.,2020, Robin Donnelly et.al.,2020, Kunal et.al, Paunov, C. and S. Planes,2021, Yadav 2021,etc identifies the achievements or problems faced by this sector during this pandemic situation. On the basis of the above background, the current paper investigates the technological achievements and advancement in the educational sector pre and post Covid period. Primary data for about 300 samples from School and college children, teachers and parents in and around Pondicherry are collected. Simple ratio, percentage method and data visualization technique is used to verify the above objective. Introduction and Review is provided in Section 1 and the Methodology and results are provided in Section 2 and finally the concluding remarks and policy suggestions are provided in Section 3.

## II. Result and discussion:

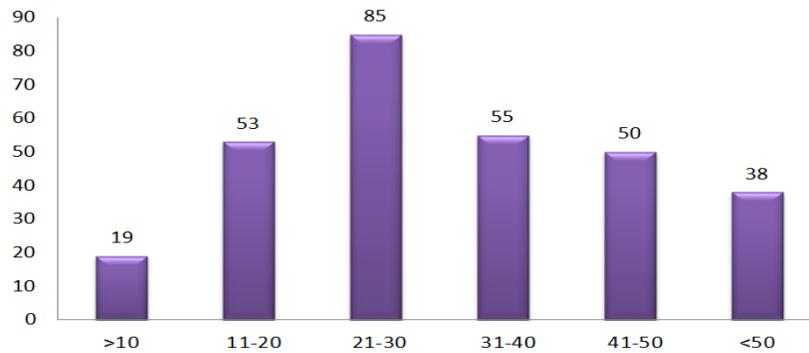
### Primary analysis

To check the objective, primary data in form of questionnaire has been collected from 150 students (including schools and Colleges), 100 Parents and 50 teachers. Graph 4 reveals the sample distribution of the study. Few questions were asked pre and post pandemic situation

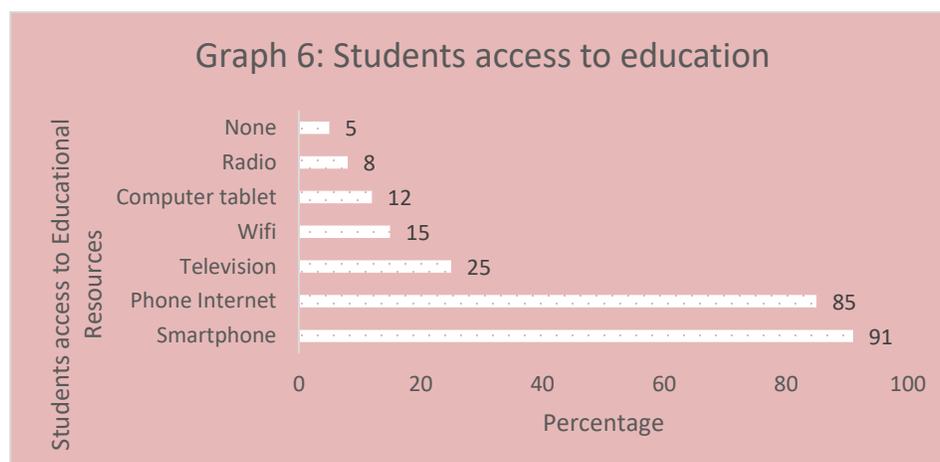


Graph 5, reveals the age distribution among the 300 respondents most of the respondents belong to the age group between 21 to 30. Also for the question “How long you spend in smartphone”, for pre covid situation around 33% of the sample use smart phone in their day to day life are less than 30 years of age and 67% of the population are above 30 years. And during the pandemic situation almost 95% of the respondents students admitted that it has become a part of their life.

Graph 5: Distribution of Age group



Source: Authors computation



Source: Authors computation

Graph 6 presents the students access to continue education during this pandemic situation Smartphone and internet played a leading role to access their studies. A paired t-test is used to analysis the mean usage of technology pre and post pandemic situation. The result reveals that the p-value is significant at 1 percent level and the technological use is greater during the post covid period.

### **Consolidated opinion of Parents, Teachers and students:**

#### **Parents Opinion regarding the online education:**

Parents opine that about 99 percent of the students have faced problem in their eye sight due to long hours of online lecture. Also, in offline class, students have some physical activity which was missing in online class. And those parents who hesitated or restricted their children in using this smart phone felt that the mobile has now become a part of life during and after Covid. Due to the over usage of this mobile not only physical issues, mentally also it had affected the students. Students' confidence can be greatly boosted through interactive classroom sessions, allowing them to become more creative and knowledgeable. Also few parents feel that they were able to view the teachers performance in live which was not possible earlier.

#### **Teachers Opinion:**

Sudden and difficult transition to working from home was associated with initial high stress and low self-confidence. Later case this has been replaced with lower stress and higher morale as they realized that this is the future.

#### **Students Opinion:**

College students feel Loss of interest, availability of internet, speed and cost, lab subjects, less interactive with fellow friends and teachers. about 90% of higher classes and college students feel that they were happy to get the degree by writing the online exam and they were against offline exams. The level of education required for many jobs is increasing day by day. So technological change in the wider world both increases the number of people who need an education and changes what it is they need to learn as well. Finally the lower and middle school students feel that, online class they missed the presence of their friends, teachers, playground, snacks and lunch time, chatting etc.

## Conclusion and policy suggestion:

The coronavirus has transformed many aspects of human lives. Education also brings a reduction in inequalities and functions as a means of improving their status within the family and develops the concept of participation. The analysis reveals that, COVID situation has brought many technological revolution especially in the educational sector, some traditional teachers struggled in the early stage, everyone seemed to excel and travel along with technology. Initially this system was new to adapt and due to low attention many students become passive learners. It will be up to instructional designers and educational technologies to make the most of the opportunities provided by technology to change education so that effective and efficient education is available to everyone everywhere.

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Web resources:

<https://economictimes.indiatimes.com/>

<https://www.unicef.org/india/press-releases/covid-19-schools>

<https://www.itu.int/itu-d/reports/statistics/2021/11/15/>

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