



# Role of ICT in Education during covid pandemic

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## ABSTRACT

The corona pandemic worldwide has resulted in the closure of the educational institutions worldwide. During this time the online mode of learning came as the new mode of learning and education. This has impacted the education field in a big way. The shift from offline to online courses has resulted in more online platforms coming up and ICT( Information communications Technology) enabled learning has become popular. The present paper studies the role of ICT in education and its future scope as a complimentary technology in teaching.

## I. INTRODUCTION:

The spread of covid -19 pandemic has been a global phenomenon. It has affected educational institutions worldwide, leading to the near-total closures of schools, early childhood education and care (ECEC) services, universities and colleges.

Most governments decided to temporarily close the educational institutions. This has been done to reduce the spread of the pandemic. In general, people with less money had lesser educational facilities as compared to the people with more money who have found education even during the covid times. The online courses have shifted the labour of education from schools to families and individuals. New online programs have shifted the labour of education from schools to families and individuals, and consequently, people everywhere who relied on schools rather than computers and home life have had more difficulty accessing their education. Early childhood education and care (ECEC) as well as school closures impact not only students, teachers, and families, but have far-reaching economic and societal consequences. School closures in response to the pandemic have brought to attention social and economic issues, including student debt, digital learning, food insecurity, and homelessness, as well as access to childcare, health care, housing, internet, and disability services. The disadvantaged children and their families had more

impact causing interrupted learning, compromised nutrition, childcare problems, and consequent economic cost to families who could not work.

In response to school closures, UNESCO recommended the use of distance learning programmes and open educational applications and platforms that schools and teachers can use to reach learners remotely and limit the disruption of education.

As the world was hit by the pandemic during the last two years the entire technology of the education got a paradigm shift whereas the conventional mode of classroom teaching and learning got disrupted as a result of closure of schools and higher educational institutions by the respective governments to check the spread of the pandemic.

The ICT refers to the information and communication technology that employs the computers, hand held devices like laptops and mobile along with the communication lines and internet network to connect to the classrooms. The ICT enabled learning uses these digital technology methods to give and follow the instructions. ICT is a broad subject and the concepts are evolving. It covers any product that will store, retrieve, manipulate, transmit, or receive information electronically in a digital form (e.g., personal computers including smart phones, digital television, email, or robots)

There is evidence that, to be effective in education, ICT must be fully integrated into the pedagogy. Specifically, when teaching literacy and math, using ICT in combination with Writing to Learn produces better results than traditional methods alone or ICT alone. The United Nations Educational, Scientific and Cultural Organisation (UNESCO), a division of the United Nations, has made integrating ICT into education part of its efforts to ensure equity and access to education. For centuries teachers are teaching by using books and delivering lectures using traditional methods, which are quite hard, and teachers must work a lot to make lectures interactive. Quality education depends on



the factors like keeping learners motivated, continuously developing their skills, and training teachers to stay updated by providing the latest knowledge and information about their courses and area of research. ICT serves as an educational transformation tool. It creates a learner-centered environment. ICT applications and tools training help the teachers integrate the traditional teaching method to the state-of-the-art ICT based effective education system. In a smart ICT education system, teachers can access the recently published material and break down the learning outline into activities and lessons to gain more content consolidation and rehearsal for the students. The interactive lectures keep the students motivated and satisfy their learning curiosity. Student learning outcome has increased rapidly. Students have developed the necessary skills which are required in real-time. Accessibility to the learning content is improved with advancements in technologies; teachers and students can upload and download learning material in the system by using their phones or laptops anywhere.

The employing the ICT has resulted in impacting the education in the following ways:

**The virtual classroom :** The concept of real time classroom teaching got replaced by the online classes where the teaching is done by ict devices and the students from their homes could attend the lectures.

The COVID-19 has resulted in schools shut all across the world. Globally, over 1.2 billion children are out of the classroom.

As a result, education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms.

**The increased retention:** Research suggests that online learning has been shown to increase retention of information, and take less time, meaning the changes coronavirus have caused might be here to stay.

**Demand for Online courses:** In response to significant demand, many online learning platforms are offering free access to their services, including platforms like BYJU'S, a Bangalore-based educational technology and online tutoring firm founded in 2011, which is now the world's most highly valued edtech company. Since announcing free live classes on its Think and Learn app, BYJU's has seen a 200% increase in the number of new students using its product, according to Mrinal Mohit, the company's Chief Operating Officer.

Tencent classroom, meanwhile, has been used extensively since mid-February after the Chinese government instructed a quarter of a billion full-time students to resume their studies through online platforms. This resulted in the largest "online movement" in the history of education with approximately 730,000, or 81% of K-12 students, attending classes via the Tencent K-12 Online School in Wuhan.

Other companies are bolstering capabilities to provide a one-stop shop for teachers and students. For example, Lark, a Singapore-based collaboration suite initially developed by ByteDance as an internal tool to meet its own exponential growth, began offering teachers and students unlimited video conferencing time, auto-translation capabilities, real-time co-editing of project work, and smart calendar scheduling, amongst other features. To do so quickly and in a time of crisis, Lark ramped up its global server infrastructure and engineering capabilities to ensure reliable connectivity.

Alibaba's distance learning solution, DingTalk, had to prepare for a similar influx: "To support large-scale remote work, the platform tapped Alibaba Cloud to deploy more than 100,000 new cloud servers in just two hours last month – setting a new record for rapid capacity expansion," according to DingTalk CEO, Chen Hang.

Some school districts are forming unique partnerships, like the one between The Los Angeles Unified School District and PBS SoCal/KCET to offer local educational broadcasts, with separate channels focused on different ages, and a range of digital options. Media organizations such as the BBC are also powering virtual learning; Bitesize Daily, launched on 20 April, is offering 14 weeks of curriculum-based learning for kids across the UK with celebrities like Manchester City footballer Sergio Aguero teaching some of the content.

While some believe that the unplanned and rapid move to online learning – with no training, insufficient bandwidth, and little preparation – will result in a poor user experience that is un conducive to sustained growth, others believe that a new hybrid model of education will emerge, with significant benefits. "I believe that the integration of information technology in education will be further accelerated and that online education will eventually become an integral component of school education," says Wang Tao, Vice President of Tencent Cloud and Vice President of Tencent Education.

There have already been successful transitions amongst many universities. For example, Zhejiang University managed to get more



than 5,000 courses online just two weeks into the transition using “DingTalk ZJU”. The Imperial College London started offering a course on the science of coronavirus, which is now the most enrolled class launched in 2020 on Coursera.

Many are already touting the benefits: Dr Amjad, a Professor at The University of Jordan who has been using Lark to teach his students says, “It has changed the way of teaching. It enables me to reach out to my students more efficiently and effectively through chat groups, video meetings, voting and also document sharing, especially during this pandemic. My students also find it is easier to communicate on Lark. I will stick to Lark even after coronavirus, I believe traditional offline learning and e-learning can go hand by hand.”

### The challenges of online learning

There are, however, challenges to overcome. Some students without reliable internet access and/or technology struggle to participate in digital learning; this gap is seen across countries and between income brackets within countries. For example, whilst 95% of students in Switzerland, Norway, and Austria have a computer to use for their schoolwork, only 34% in Indonesia do, according to OECD data.

In the US, there is a significant gap between those from privileged and disadvantaged backgrounds: whilst virtually all 15-year-olds from a privileged background said they had a computer to work on, nearly 25% of those from disadvantaged backgrounds did not. While some schools and governments have been providing digital equipment to students in need, such as in New South Wales, Australia, many are still concerned that the pandemic will widen the digital divide.

### Is learning online as effective?

For those who *do* have access to the right technology, there is evidence that learning online can be more effective in a number of ways. Some research shows that on average, students retain 25-60% more material when learning online compared to only 8-10% in a classroom. This is mostly due to the students being able to learn faster online; e-learning requires 40-60% less time to learn than in a traditional classroom setting because students can learn at their own pace, going back and re-reading, skipping, or accelerating through concepts as they choose.

Nevertheless, the effectiveness of online learning varies amongst age groups. The general consensus on children, especially younger ones, is that a structured environment is required, because

kids are more easily distracted. To get the full benefit of online learning, there needs to be a concerted effort to provide this structure and go beyond replicating a physical class/lecture through video capabilities, instead, using a range of collaboration tools and engagement methods that promote “inclusion, personalization and intelligence”, according to Dowson Tong, Senior Executive Vice President of Tencent and President of its Cloud and Smart Industries Group.

Since studies have shown that children extensively use their senses to learn, making learning fun and effective through use of technology is crucial, according to BYJU's Mrinal Mohit. “Over a period, we have observed that clever integration of games has demonstrated higher engagement and increased motivation towards learning especially among younger students, making them truly fall in love with learning”, he says.

**Conclusion:** The recent trends in education indicate that ICT will be an important component and technology for learning and is going to stay. Thus the future is for the hybrid mode of learning whereas the online teaching methods will be used in combination with the conventional offline methods. The schools and other institutions will spend more amount to strengthen the ICT enabled learning. The online teaching and learning portals are to grow more.

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