

# The Paradigm Shift for Teachers: Leading in crisis, reimagining the future

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**Abstract**— Education system all over have been hit hard by the malicious COVID -19 pandemic. We have grievances pouring in regarding the difficulties faced by parents and students but teachers also have a fair share of the challenges. It has forced educators to transform their lesson into online versions within a short time frame. Teachers are confronted with the need to adapt to remote teaching without compromising the quality of teaching learning. The main purpose of the present theoretical paper is to discuss about teachers technological pedagogical knowledge their adaptation to online teaching during COVID 19 school closure, the challenges faced by them and the ICT measures adopted by teachers to ensure quality education and better retention by students. The conclusion is drawn focusing on the need for effective professionalisation of teachers in adopting technology in educational practices.

**Keywords**— COVID-19 pandemic, remote teaching, technological pedagogical knowledge, ICT, professionalisation of teachers.

## 1. INTRODUCTION

On March 11, 2020, the World Health Organization declared COVID-19 as a global pandemic hitting hard different parts of the world with the confirm cases going up to 11,8000 from 114 countries. An unanticipated state of dormancy was basically seen in every walk of life. It has jeopardised every sector of the nation. In the field of education COVID-19 has altered pedagogical approaches from in-person to online teaching. There has been a shift from normal modes of teaching to a remote or distant mode which has transformed education to become digital education. It has forced teachers to retrofit living spaces into professional areas and as days passed by challenging situations proliferated. The unfamiliarity with technology especially for the non- tech savvy staff posed a heavy impediment to pull through the steep learning curve that the pandemic situation posed. Technology has been an important part of our lives since a long time but lack of knowledge regarding how technology can be best used to benefit students across diverse matters was the biggest challenge. There was a need for mass up skilling of teachers. Teachers had to delve into an unfamiliar work of online teaching. Older teachers were quite uncomfortable with the newly adopted tech-based education as they were used to personal interaction with their students for a long time.

Technological Pedagogical Knowledge ( TPK ) specifically describes relationships and interactions between technological tools and specific pedagogical practices. It gives us an idea about the tools that can be deployed alongside pedagogy which will in return develop the lesson at hand. In the context of formal education especially school education is considered as a vehicle for cultural transformation, ICT has a function in the learning process, at least, in the form of a learning aid. It can be generally used as a teaching aid for teachers, a learning aid for students and a mean for student teacher interaction. It has often been a notion that ICT experts are being positioned only in ICT fields but in a situation where the teacher and the taught are geographically separated at a mass scale knowledge in ICT will act as a catalyst which will bridge the gap and will facilitate understanding of the subject matter. Professionalisation in using ICT as a teaching aid is basically what is needed to make teaching learning possible. Moving teaching learning content into online space and adapting to the requisite software has become the new challenge. Only knowledge of technology would not be a saviour in such a situation. Technology should be amalgamated with content for making the topic interesting and apparent. Few subjects like science, geography, Mathematics requires more technological involvement for better transmission and understanding. Use of proper ICT tools would result in proper understanding, achievement of optimal learning outcome and this in return will boost teacher's confidence.

## 2. WORKING IN THE CRISIS

According to Marzano(2007) past studies gives quantitative information about the influence of effective teacher and democratic school on the academic achievement of a learner. Hence the role of a teacher as well as of the school is directly proportional to each other. The education ecosystem of India has been weighed down for various reasons like stagnation in school education, early dropouts, urban rural divide, learning deficiencies ,teacher absenteeism, gender

disparities, lack of teacher and various other reasons. Now it faces a yet bigger challenge of widening digital divide. According to UNICEF, COVID-19 pandemic has battered education system across the globe affecting the close to 90% of the world's student population. In India, over 1.5 million schools were shut down due to the pandemic affecting 286 million children from pre primary to secondary levels. A World Bank report, 'Beaten or Broken: Informality and COVID-19 in South Asia', has quantified the impact of school closures in monetary terms- India is estimated to lose Rs 32.3 lakh crore in possible future earnings. To fight back the damage education system has embraced the digital mode to fill in the void left by classroom teaching. There is a call to integrate digital education in India into the mainstream. The National Educational Policy released by the Union government in July has harped on the importance of online education blended with the traditional mode.

Individuals born in the 1950's, 60's and 70's did not grow up with gadgets like microwaves, cell phones, cable televisions or computers. Even after this technology could not be afforded by every individual in the country. This pandemic has forced such teachers to use technology in the teaching learning situation without warning. The biggest challenge can be classified under two heads mentioned below:

### **1. Teacher attitude towards the use of technology**

"Whoever teaches learns in the act of teaching and whoever learns teaches in the act of learning" wrote the Brazilian pedagogue Paulo Freire in his famous book "Pedagogy of Freedom" (1996). There has been noticed a systematic shift in which education will move away from "a teaching culture to a learning culture". Now that technology is the saviour and is being widely used in schools the most important question is how to best implement technology rather than whether technology will be used in education. Teacher's attitude and belief is very important determinant in judging the effectiveness of technology in education. Following ways could be adopted to optimise positive attitude towards the use of technology:

#### ***Teacher's confidence***

There is a huge gap between teachers who has less access to technology and the student today who are raised in an environment saturated with technology. It is sometimes very difficult to manage these digital natives especially by teachers who are technologically challenged. So if the teacher is less confident it is very difficult to bring in control and they will probably fail to use technology to its truest extent.

#### ***Teacher's concept about technology***

Technology can basically be used either to supplement or enhance a lesson or to make the lesson accessible to all. The concept of technology in education bears different opinions. Teachers clinging to the traditional lesson plan believe in talk and chalk approach. They doubt the efficiency of technology in promoting classroom teaching and learning. Few feel the threat technology poses like replacement of teachers with computers or other technological aids. Hence through proper integration and guidance teacher's perception about the use of technology has to be enhanced. They should be convinced in the process that technology is no threat. It is in fact a tool in the hands of the teacher which can change how we learn.

#### ***Institutional motivation***

Educational institutions should switch from the system of "one method fits all" to a more child centric approach. It is not technology which will only be used to overcome a crisis or to promote the standard of the institution rather a blended approach should be opted where a proper blend of technology along with the traditional methods can be used. Institutions which are technologically equipped should encourage the teachers to explore them at their own pace without any deadline haunting them. Technical expert can be a constant guide. Proper motivation is required which would act as an impetus to gear up the confidence of the teaching faculty.

### **2. Proper integration of technology in education for better understanding**

It is not technological knowledge which can make one a good educator. An approach is needed which will strike a balance between teacher's knowledge and the application of the knowledge in unique circumstances. There is no "one best way" to integrate technology in educational situations. The core of good teaching comprises of three main components and their relationship between them namely content, pedagogy and technology. Successful technology integration also recognises the Manner in which the myriad and ever changing contextual realities of the classroom and school influence what teachers do and what students learn (AACTE Committee on Innovation & Technology, 2008). Punya Mishra and Matthew J. Koehler's 2006 TPACK framework offers a productive approach to many of the conundrum that teachers face in implementing educational technology (Ed tech) in their classroom. The three types of knowledge namely TK, PK and CK are combined and recombined in various ways inside the TPACK model.

***Content knowledge (CK):*** Content knowledge or CK is the teacher's knowledge about the subject matter which she is intending to teach. This is a very vital domain where teacher's concept about the topic, theories, ideas, application etc is

clear to herself. The cost of not having a comprehensive base of content knowledge can lead to students' misconceptions, incorrect information and blurred idea about the topic.

**Pedagogical knowledge (PK):** Pedagogical knowledge or PK is the teacher's knowledge about the processes or methods that can be used to propagate the knowledge. It includes general classroom management skill, lesson planning and students evaluation. Hence content knowledge combined with proper pedagogical practices can bring in a desired outcome.

**Pedagogical Content knowledge (PCK):** Every content cannot be propagated in the same way. Few ways are more apt depending on the content in hand. A teacher interprets the subject matter and finds out how the content can be propagated in multiple ways. The teacher needs to choose the correct way keeping in mind the mental makeup, age, interest and prior knowledge of the students. It chains curriculum, pedagogy and assessment together.

**Technology Knowledge (TK):** The definition of Technology knowledge (TK) keeps on changing with time. It describes teacher's knowledge and ability to use various technological tools and the allied resources. It involves understanding teacher's knowledge of how to use technology and when. TK involves understanding Ed Tech and its various possibilities in classroom, learning to recognise when it will assist or hinder learning and finally accepting what the new technological innovations has to offer.

**Technological Content Knowledge (TCK):** This involves understanding how technology and content interact with one another and how a proper integration can change the way the lesson was taught earlier. The teacher has to find out the best suited Ed tech tool for teaching the content to the students. A proper choice will make the lesson interesting and will result in longer retention by the students.

**Technological Pedagogical Knowledge (TPK):** This involves the knowledge a teacher requires for successful pedagogical practice in a technology based learning situation. It basically strikes a balance between technological tools and pedagogical practices for successful teaching learning.

TPACK is the ultimate result of the various combinations mentioned above. TPACK is a framework for teachers knowledge which requires flexibility and fluency— not just with curriculum based content, but also with pedagogy, technology, and context — remembering that each influences other in a pervasive way ( Harris, J.B., Mishra, P., & Koehler, M. 2009 ).

### 3. TEACHERS TRAINING TO BUILD IT BACK BETTER (TEACHER CAPACITY BUILDING )

#### I) NISHTHA ( National Initiative For School Heads And Teachers For Their Holistic Advancement) Online

It is an online capacity building programme for covering 42,00,000 elementary school teachers and school heads in India. NISHTHA Online was launched on 6th October, 2020 for elementary teachers. There are 18 module in the programme among which 12 are for teachers, 5 for school heads and 1 specialised module on teaching learning during COVID-19 times. This module talks about promoting learning during this pandemic and adopting suitable assessment methodologies as well as concerns related to mental well being.

#### II) DIKSHA ( Digital Infrastructure For School Education )

Apart from providing textbooks for students, DIKSHA provides training modules for teachers on subjects that even go beyond the curriculum, such as mental well-being. Both the DIKSHA app as well as the website offers free access but registration on the portal helps in keeping a track about the progress made. Though this platform was launched four years back ( 2017) yet it received a huge response since the COVID-19 lockdown since last March. Teachers can use this portal and benefit from the training modules which aim at facilitating career progression and periodic training for tutors. Since March 2020, the portal received an average of three crore hits per day ( According to ThePrint,2021). It has been accepted by several private and Government schools teachers and administrators that the app offered holistic lessons beyond textbook knowledge.

In the circular numbered 39 dated 30th June 2020 CBSE introduced two courses namely “ Pedagogy of Environmental Studies” and “ Health and Well-being in Schools”. A digital certificate was given after successful completion of the training by the teachers.

#### III) TERM ( TEACHER ENERGISED RESOURCE MATERIAL)

The Central Board of Secondary Education ( CBSE ) has developed Teacher Energised Resource ( TERM ) which is a series of Manuals for teachers of Science and Mathematics for class VI to X. These manuals will help the teachers to align their classroom transaction to build competencies. Each chapter corresponds to the respective chapters in NCERT textbooks. This CBSE circular dated 21st August, 2020 includes built up concepts linked to NCERT Learning

Outcomes. Every chapter has a set of assessment items and sample strategies for transaction of concepts. Key metrics since launch in September 2020 are given below:-

- Total content plays for science TERM as on 22nd October 2020 is approximately 72K
- Total content plays for mathematics TERM as on 22nd October 2020 is approximately 62K

IV) CBSE has trained 4,80,000 teachers ( during April- September 2020 ) , KVS trained 15855 and JNV trained 9085 teachers in India. NVS imparted training in online assessment and GeoGebra.

V) Special orientation for primary teachers and Head Masters in Kendriya Vidyalaya Sangathan was organised for sensitising them on handling Class I students and conducting their online classes online since they took admission during the pandemic when schools were not functioning.

VI) Vidya - Daan

CBSE conceptualised “Vidya- Daan” , a program based on crowd sourcing of content from teachers and meant to synergise countrywide developments by providing schools and teachers from the metro cities to the smallest villages with good quality e-content that can be used by them anytime, anywhere at no cost. Phase I of Vidya Daan provides various types of e- learning content for class VI-X with contributions of different affiliated schools and developed a repository of 10,000+ e-learning content pieces.

#### 4. CHALLENGES FACED BY TEACHERS IN ONLINE CLASSROOM

The seismic shift in the education scenario due to the pandemic was not easy. The problem ranges from dealing with parental pressure to student’s shenanigans, writes Saraswathy Ramamoorthy. The vexatious experiences teachers are facing in the classroom or mainly due to the lack of experience in handling the new learning platform and students who are more tech savvy taking advantage of this.

Apart from knowing the new learning platform teachers have to also know the nuances of the learning platform whether it be Google classroom, zoom or any other platform. In order to avoid disturbances from the participants teachers have to know certain features like stopping annotations, managing chat box, sharing of documents etc. There are often problems in respect to indiscipline from student’s end like unmuting themselves when it is not needed or muting themselves when a question is asked. There are students leaving the meeting intentionally and later on giving a lame excuse that the network strength was weak. In case of any unruliness teachers have to make sure to take necessary action immediately to establish themselves in control. Adding to the woes are the peeping parent’s expectations which adds an extra baggage on the shoulders of already weary teachers.

#### 5. ROLE OF SCHOOL AUTHORITIES AND RESTORING TEACHER’S MENTAL HEALTH AND WELL-BEING

The responsibility of Classroom management lies in the hands of the teachers but strengthening teacher’s confidence to play their role with ease lies in the hands of the school authority. School authorities along with the teachers should design a framework of behaviour, discipline and realign the curriculum in accordance with the emerging situation. Keeping this current pandemic situation into consideration NCERT has come out with ALTERNATIVE ACADEMIC CALENDAR which expects a basic mobile to make a connection between child or parent with a school teacher. It is based on multiple pedagogical guided learning followed by self study.

A pandemic situation accompanies with it feelings like stress, anxiety, grief and worry so ensuring emotional well-being of teachers is of paramount importance. The Ministry of Human Resource Development, Government of India has initiated a programme called ‘MANODARPAN’ covering a wide range of activities to provide psychological support to students, teachers and families for Mental Health and Emotional Well-being during outbreak and beyond.

#### 6. SUGGESTIVE ACTIVITIES FOR TEACHERS TO TAKE CARE OF THEIR MENTAL HEALTH

- Maintain a reflective diary: A habit of writing daily experiences before going to bed.
- Take time in observing the surroundings by identifying smells, texture and visuals.
- Perform yoga, reading, walking etc which helps to connect us with our own self.
- Include small changes which can be introduced in life.
- Taking care of physical health and sticking to regular meals with correct nutritional variety, maintaining healthy sleep habits and engaging in pleasant and relaxing activities.
- Engage in productive and creative work like drawing, writing or something that might match one’s interest.
- Asking for help from a colleague or expert when needed.

#### 7. CONCLUSION

The challenges that the pandemic has created have made the world think of possible solutions to overcome the hurdles. India's educational sector has faced tremendous changes when so many children had to sit at home. Technological innovations in the sector have made it possible to smoothly navigate through such hard times. Educational resources, guiding tools, teacher's technological pedagogical knowledge has let realise the importance of correct propagation of e-learning and the same has been realised by various stakeholders in the educational community. Other than the technological hurdles, figuring out online etiquette, hovering parents, maintaining discipline, completing the syllabus and making lessons interesting becomes a great challenge for the teachers. Among all the grim situations that the pandemic has taken us through teacher's who were not that tech savvy have adapted to the new system quite efficiently and somehow it a created a platform for blended teaching in the years to come. The shift is undoubtedly a massive one but it has somehow equipped each teacher to face any kind of challenges in the educational field. Things like adapting to new apps, new websites, various educational tools, online proctoring which were quite threading in the initial stages of lockdown have turned out to be a part of daily work life. Truly life is all about adapting and moulding ourselves to new situations. This surely has given us an insight into a new era of learning and digital maturity.

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