Challenges Faced by School Teachers for Online Teaching

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Abstract

The purpose of this essay is to identify the difficulties that teachers in diverse Indian home situations experience when they deliver online instruction. To examine how the components interact, the study used the TISM method. From a literature search and expert perspectives, nine variables that influence teachers during online teaching have been discovered. The MICMAC analysis is used to classify the variables based on driving power and dependence. The study's results could be useful to regulatory authorities and primary and secondary educational institutions that are considering making online teaching a routine practice. The findings will aid them in evaluating their present policy frameworks, as well as building new regulations and technology mechanisms to support their instructors in effectively embracing EdTech to deal with any future crises.

Keywords
Online teaching; schoolteachers; TISM; COVID-19, education.

1. Introduction
Covid-19, a contagious virus, has wreaked havoc on the global economy and tremendously influenced global learning. As per the "United Nations Educational, Scientific, and Cultural Organization (UNESCO)," the disaster affected 63 million teachers in 165 nations. 1.3 billion students throughout the world were unable to pursue school or college, including 32,07,13,810 students from India on its own. The disruption of teaching and exams has slowed student progress and had a broader socioeconomic effect. Covid-19 shifted from a classroom learning paradigm to an education technological (EdTech) paradigm, which introduced instructors and students to cutting-edge instructional approaches.

It's important to remember that online education can't work without instructors, who will be the main personnel of every academic facility. Teachers must adapt to technology to undertake online teaching and evaluations successfully. Online education is not very common in India, and there are several obstacles to overcome, including a lack of proper infrastructure, such as laptops, a lack of encouragement, family distractions, a lack of technical training, and so on. The aim of this study is to recognize the obstacles that teachers face when teaching and assessing students online at home. The study's results could be useful to regulators who are considering making online teaching and evaluation a routine practice in the future.

2. Literature Review
All University Collages in Sri Lanka were closed due to the spread of Covid-19 (Jayalath et al. 2020). For both academics and students, e-learning had become the rubric. This paper provides key insights into developing a digital strategy for online degree delivery in universities. To identify the characteristics of online learning, rank the barriers to online learning adoption, and assess the effectiveness of online learning. Reveal any possible steps taken to address problems with internet distribution and ease the transition to an online mode of education in the event of a full lockdown. This paper also discusses the above concerns in the context of university collages where no prior experience with online course delivery exists. Many with basic IT skills and those who have attended taring workshops are secure in their ability to embrace the method, while those with weak IT competency choose to gradually adapt. Inadequate internet bandwidth, as well as poor and inconvenient internet connectivity, exacerbate the issue. Inadequate ability to handle the vast number of students using the internet is a concern once again.

Aristovnik et al. (2020) conducted the latest survey till present about how learners understand the effects of Covid's initial phase affecting various elements of their lifestyles on a worldwide scale, and how individual perceives the effects of Covid's initial shock on various components of their living. Due to a lack of computing competence and the perception of a larger burden, they were unable to perceive their own greater success in the

current educational context. Frustration, stress, and resentment were widespread among students, who were more concerned about their future professional employment and studies. After only some few months of the Covid-19 outbreak, it is obvious that now the corona issue and its wide-ranging impacts would persist for long, altering our future lives. If there are any cultural or regional variations in learners' fulfilment with and perceptions of many areas of educational learning and professional life as a result of the shift from onsite to online lectures, individual situation and attitudes, and the role of certain organisations and their initiatives even during Covid-19 pandemic? In India, approximately 32 crore students were unable to move schools or colleges, and all educational activities were halted (Madeshia and Verma 2020).

Many new ways of learning, new viewpoints, and new trends have emerged as a consequence of the Covid-19 infection, and this trend may continue as we move further into the future. Just 45 crore people out of our total population have access to the internet/e-learning, posing a significant barrier to complete progress. With technical advances and developments, the pandemic has been propelling the education sector forward. Educational evaluation scheme, reduced job opportunities, and destabilized all educational practices are the most impacted areas of India's higher education. Encourage personalised learning, Demand for Open and Distance Learning (ODL) and online learning, educational institutions may operate with different shifts every day, and several other developments will enable the education sector to envision new ways of teaching and learning.

The Covid-19 epidemic has taught us that transition is unavoidable (Jena 2020). It has acted as a catalyst for educational institutions to develop and adopt platforms with previously unexplored technologies. As a first line of defense, the WHO recommends maintaining social distance. Every student's schedule was ruined by the lockdown. Covid-19 has presented educational institutions with many challenges and opportunities to improve their technical expertise and infrastructure. For affective communication, there are WhatsApp groups of caregivers, teachers, students, and parents who are still in contact to share their difficulties through this e-medium. Many specialized educational institutions in India are currently lacking in digital capabilities to deal with the abrupt shift from a conventional education system to an online education system.

Multimodality is an emerging trend that could influence how technological education is developed, particularly in extremely interactive virtual educational settings such as Virtual Reality (VR) (Philippe et al. 2020). Active pedagogy and learner-centred approaches are embraced in digital teaching and learning. Multimodality refers to "many" forms of representation that include print, visual images, and design elements. When incorporated into a coherent pedagogic approach with clearly specified training goals and guidance, digital tools are at least as effective as non-digital tools. Virtual reality, for example, is an interactive and high-fidelity digital technology that can complement or improve analogue learning spaces as modes of speech. The use of a variety of tools, facilities, and services in a pedagogical manner to improve the students' experience is one of the most important aspects. Learners tend to develop a more versatile approach focused on inquiry and information retrieval as a result of the incorporation of multimedia learning into various modes of learning.

Digital technology had also demonstrated to be an excellent tool for filling the gap between unlimited availability to elevated training and increased student achievement (Abdulrahaman et al. 2020). In addition to text and photographs, existing materials contained digital features such as sound, film, animations, and 3-D. ICT is the use of technology and software to gather, process, store, present, and distribute data, which is frequently in digital form. Using apps provide a dynamic environment for learners by offering content that will help them better understand ideas. Depending on whether multimedia technology is used for teaching or studying, it can be divided into two categories.

Higher education's teaching and learning processes have been radically reshaped with the development of information and communication technologies (ICT) (Al-Senaidi 2009). ICT is increasingly being used in higher education institutions around the world for teaching, curriculum creation, personnel development, and student learning. A considerable number of professors are either hesitant or unable to use technology in their classrooms. Since ICT adoption is more than a technological question, there are no universal solutions to the problems. Factors such as innovation characteristics, as well as numerous fiscal, sociological, organizational, and psychological variables, influence adoption rates. Between teachers in different countries, there was a major difference in the most significant barriers to ICT.

There has been a lack of ICT adoption and inclusion of teaching and learning (Andoh Charles 2012). Some of the limitations include a lack of ICT skills within instructors, a lack of teacher confidence, a lack of methodological teacher preparation, a lack of relevant enterprise technology, limited access to ICT, the restrictive structure of traditional school systems, tight curriculum, and so on. Today's academic institutions are seeking to rearrange their teaching methods and classroom facilities in order to bridge the current technological gap in learning and

teaching. Adoption is described as an individual's decision to use a new technology as the best course of action available. When using technology in the classroom, content and pedagogy must be linked. Teachers' attitudes toward technology have a significant impact on their acceptance and incorporation of computers into their classrooms.

The conventional educational structure was replaced with an educational technologies (EdTech) model (Joshi 2020). The disturbance of teaching and examinations has caused a delay in student development and has had a wider socioeconomic effect. Many Indian higher education institutions lack institutionally funded technologies. The majority of the teachers lacked the necessary skills to teach and administer tests online. Many colleges continue to use an open-source framework for online instruction, raising concerns about evaluation accuracy and confidentiality. Teachers lack the necessary resources, such as properly equipped computers, internet access, and microphones, to effectively impart education.

The introduction of ICT-based tools has transformed the whole method of teaching into one that is focused on the learners. (Bordoloi 2021). The reach of learning opportunities has expanded thanks to open education. Massive open online courses (MOOCs) as well as various interactive education portals have opened up a world of learning chances for learners by expanding their brains and supporting them in getting needed skills and experience, which are perhaps the most significant requirements for a society's healthy existence. The declared aims of India further learning such as information exchange, use of communication networks and mass media technologies, enhancing efficiency, and so on, must be considered as the only method of assuring the employability of Indian learners.

3. Research Methodology

3.1 Data collection

The study conducted semi-structure interview with a standard questionnaire. The Purposive sampling technique was used in this study.

3.2. TISM

The TISM methodology is used to comprehend how many elements affecting schoolteachers for online teaching with one another. To examine the links between many aspects in the online teaching, many researchers have adopted the TISM technique such as studies of “Patri and Suresh 2017;” “Patil and Suresh 2019;” “Menon and Suresh 2019;” “Menon and Suresh 2020a;” “Suresh and Arun Ram Nathan 2020;” “Lakshmi Priyadarsini and Suresh 2020”.

The following steps are adopted from the article “Vaishnavi et al 2019a;” “Vaishnavi et al. 2019b;” “Vaishnavi and Suresh 2020;” “Menon and Suresh 2020b;” “Lakshmi Priyadarsini et al. 2020” to successfully apply the TISM model:
The first step was to find the variables affecting schoolteachers for online teaching. This was discovered through examining the literature and consultation with subject-matter experts. Table 1 includes a list of the influencing elements.

Table 1. Identified factors affecting online teaching.

F. No.	Factors	Reference / Expert opinion
1	Lack of basic facilities (F1)	Mahmood (2021)
2	External distraction (F2)	Levin et al. (2013)
3	Family interference (F3)	Expert opinion
4	Budget for institutional-supported technologies (F4)	Joshi et al. (2020)
5	Lack of training (F5)	Berge (1998)
6	Lack of technical support (F6)	Joshi et al. (2020)
7	Negative attitude (F7)	Expert opinion
8	Course integration with technology (F8)	Expert opinion
9	Lack of motivation (F9)	Mohamad et al. (2015)

It is necessary to build conceptual links between the components in order to arrive at the “Initial Reachability Matrix (IRM).” The consensus of the 30 respondents’ opinions are captured in IRM Table 2.

Table 2. IRM for factors affecting online teaching.

	F1	F2	F3	F4	F5	F6	F7	F8	F9
F1	1	1	0	0	0	0	0	0	0
F2	1	1	0	0	0	0	0	0	0
F3	1	1	1	0	0	0	0	0	0
F4	1	0	0	1	1	1	0	0	0
F5	1	0	0	0	1	0	0	0	0
F6	0	0	1	0	1	1	0	1	0
F7	1	1	0	1	0	0	1	0	0
F8	1	0	0	0	0	0	0	1	0
F9	0	0	0	0	0	0	1	0	1

"How factor-A influences Factor-B" is the third step where the relationship between the factor is interpreted (Sreenivasan and Suresh, 2021).

The FRM was created via the transitivity check, and this is the fourth step of TISM (Sreenivasan and Suresh, 2022). Table 3 contains the FRM.

Table 3. FRM for factors affecting online teaching.

	F1	F2	F3	F4	F5	F6	F7	F8	F9	Driving Power
F1	1	1	0	0	0	0	0	0	0	2
F2	1	1	0	0	0	0	0	0	0	2
F3	1	1	1	0	0	0	0	0	0	3
F4	1	1*	1*	1	1	1	0	1*	0	7
F5	1	1*	0	0	1	0	0	0	0	3
F6	1*	1*	1	0	1	1	0	1	0	6
F7	1	1	1**	1	1*	1*	1	1**	0	8
F8	1	1*	0	0	0	0	0	1	0	3
F9	1*	1*	1***	1*	1**	1**	1	1***	1	9
Dependence	9	9	5	3	5	4	2	5	1	

,,*** represents transitive links*

Step 5 is creating the levels from the FRM (Thomas et al. 2023).
Using professional judgements, the significance transitive linkages are determined (Thomas, and Suresh, 2022) and direct links are depicting in Table 4.

Table 4. Interaction matrix

	F1	F2	F3	F4	F5	F6	F7	F8	F9
F1	1	1	0	0	0	0	0	0	0
F2	1	1	0	0	0	0	0	0	0
F3	1	1	1	0	0	0	0	0	0
F4	1	0	0	1	1	1	0	0	0
F5	1	0	0	0	1	0	0	0	0
F6	0	0	1	0	1	1	0	1	0
F7	1	1	1**	1	1*	1*	1	0	0
F8	1	0	0	0	0	0	0	1	0
F9	0	0	0	0	1**	0	1	0	1

, represents significant transitive links*

Finally, interaction matrix and level partitions are used to produce the digraph (Suresh et al. 2021). The TISM model is shown in figure 1, and the reasons for the crucial and direct transitive links are covered in section 4.1.

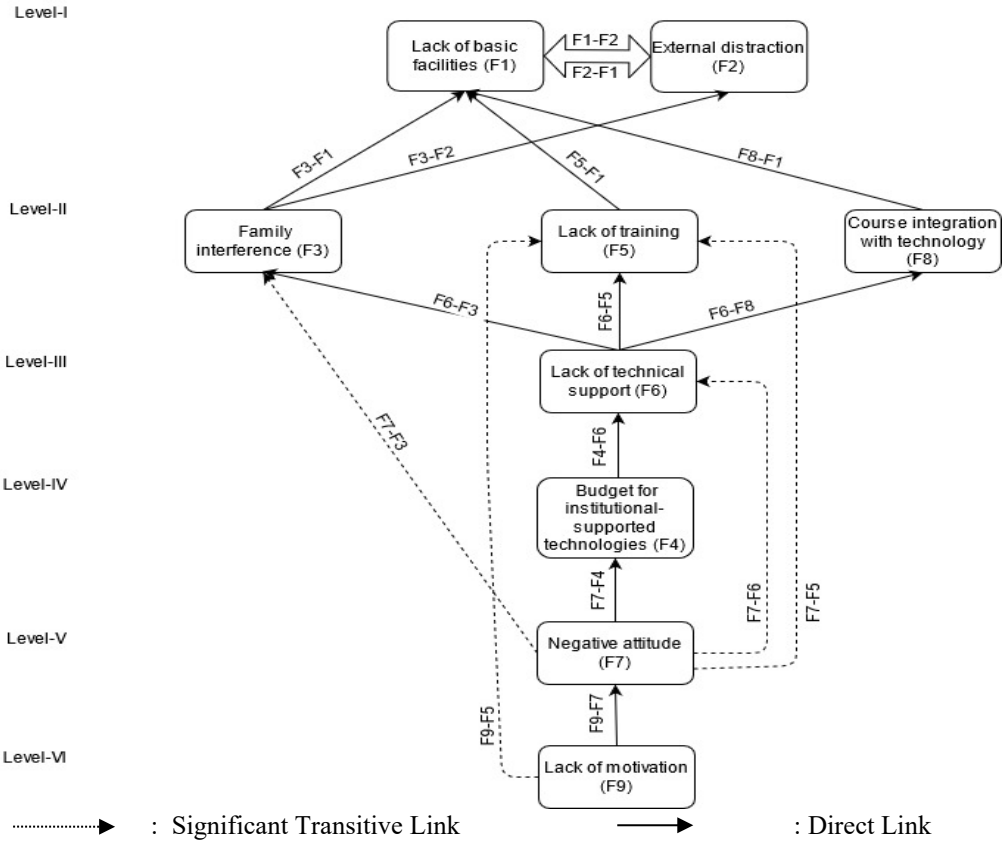

Figure 1. TISM model for factors affecting online teaching.

4. Results and Discussion

4.1 Interpretation

Online mode of teaching is new to teachers. So proper training has to be given prior. Lacking this initial training process will demotivate the teachers and will affect the online class. Education authorities has to take necessary steps in providing this training to the respective subject teachers. Online mode is entirely a new method of teaching for majority of teachers. The use of white board and marker has tremendously reduced in the online mode of teaching. The teachers are not able to express themselves in the class. The presence of mind that the students will get while sitting in a conventional class lacking in an online class. The teachers are also getting distracted during the online class because of many external distractions happening around them. They have to take care of the house as well as to take the class simultaneously. The students sometimes just open the class and leave. Due to lockdown all members will be there in the house and the teachers has to take care of both the family as well to take the online class. Some time there will be only limited space inside the house to conduct the classes. In a small house sometimes, it will be difficult to take class without the interference of the family members which will in turn create a negative attitude in the mind of the teachers.

The educational institutions have to buy the license of the institutional support technologies like Zoom, Microsoft Teams, where the online class can be conducted easily. Without proper such technologies online, class will be difficult to conduct. Live class cannot be conducted in open-source platforms like WhatsApp where the interaction of all the students and teachers is not possible. So, without proper medium for conducting the online classes, it will create a negative attitude in the mind of teachers, where the effectiveness of proper knowledge transfer is not occurring. Proper training has to be given by the educational institutions to the teachers before starting the online classes. Many teachers don't have the experience in using all the technologies and they are new with all these devices and platforms. So proper encouragement has to provide by the educational institution administrators in providing these initial training so that proper flow of class will happen otherwise it will create a negative attitude in the teachers towards taking the online classes.

Technical glitches are the inherent part of any technological devices. These issues can interfere the online classes. Many teachers are new to these digital devices. So proper technical support has to be given for the smooth conduction of these classes. Open-source platforms like WhatsApp cannot accommodate all the students and

teachers in alive class. So institutional support technologies like Zoom, Microsoft Teams has to be used for conducting classes. Even for such class for proper explanation, the teachers wish to have a white board, marker, disturbance free space for conducting an effective online class. The institutional support technologies will make the process of taking class easy and simple. This platform will create a separate room for conducting classes where others require an access to entire this class. But these software's are new to these teachers and many teachers lack that technical expertise in sing both these technological devises as well as these platforms. So, the teachers must get familiarized with this platform, for that a proper training must be given to each teacher so that they can very well use these platforms for conducting the online classes.

Many senior teachers are new to these online technologies. The sudden shift to conventional form of class to this online mode, they are forced to used many new technologies. Due to lack of experience and other issues glitches may occur in between the classes, which can interrupt the entire teaching process. So proper technical support has to be given so as to conduct a smooth class. With the Lockdown every family member is forced to stay inside their home and do their work and have their online classes. Many teachers are not used with these new technologies. So, if there are faced with some technical problems while conducting the online classes, the first person that the teachers will approach will be their family members, especially their children, who are frequently using these technological devices. During the use of technological devices, there will be certain problems that will occur. So proper technical support has to provide to handle all the problems that come in between the classes, which can interrupt the whole teaching process. Along with that proper training also must be given to these teachers. During these training sessions they can be addressed with all these technical glitches, so that in future while some problems occur, they can rectify it their own without the help of an external person. So prior training has to be provided to all these teachers.

Many courses cannot be taken online, like arts, dance class, language subjects, where there must be a one-on-one interaction with the students. So, while conducting a live class there will be problems while conducting these live classes, so proper technical support has to give at that moment to rectify all these technical problems. With the lockdown all members of the home are forced to stay inside home. For conducting an online class, the teachers must have a private free space, where there is not external disturbance. With small children inside house, it is sometimes difficult to control the children and conduct the class at the same time. So, there is a family interference is there which is mainly because lack of facilities. Family interference and external distraction do not provide a free space or silent atmosphere for the teachers to conduct an online class. But these factors are not a main cause or challenges those teachers faced.

Lack of training will affect the teachers will taking the online classes. Many teachers are new to all these medium and they must get familiarized with all these technologies. Many basic facilities like marker white board all are available in these educational support technologies like Zoom and Microsoft Teams. So, the teachers have to be given a training section on how to use all these functions in this software so that they can take these classes effectively. Course integration with technology is affecting the lack of basic facilities. Many courses like arts, Physical education, languages subjects cannot be taken in an online class effectively. Like conducting a live dance class, the teachers much have an environment where she can dance and conduct a live class which may not be available at her house. The effectiveness of such classes will be very less. So, there is a limitation in conducting online classes for such courses.

4.2 MICMAC analysis

MICMAC involves categorization of the identified factors into four classes (Suresh et al. 2019a; Suresh et al. 2019b; Suresh and Abhishek 2021), and it's shown in Table 5.

Table 5. Factor's classification using MICMAC.

Class	Factor's classification	Driving power	Dependence	Factors
Class-I	Autonomous	Weak	Weak	• Family interference • Lack of training • Course integration with technology
Class-II	Dependent	Weak	Strong	• Lack of basic facilities • External distraction
Class-III	Linkage	Strong	Strong	• None
Class-IV	Driving	Strong	Weak	• Lack of motivation • Negative attitude

				• Budget for institutional-supported technologies. • Lack of technical support

As per the MICMAC analysis, the factors influencing the last mile delivery is ranked (Suresh et al. 2021; Suresh et al. 2021; Suresh and Yogesh, 2021; Suresh and Krishnan 2021) in Table 6**.**

Table 6. MICMAC rank for factors affecting online teaching.

Factor	Driving power	Dependence	Driving power / Dependence	MICMAC rank
F1	2	9	0.222	6
F2	2	9	0.222	6
F3	3	5	0.600	5
F4	7	3	2.333	3
F5	3	5	0.600	5
F6	6	4	1.500	4
F7	8	2	4.000	2
F8	3	5	0.600	5
F9	9	1	9.000	1

Figure 2 depicts the MICMAC graph. Table 6 shows the ranking of the factors affecting online teaching in schools. According to the ranking, lack of motivation, negative attitude, budget for institutional-supported technologies, lack of technical support are the key factors. Lack of basic facilities, external distraction is ranked sixth in the MICMAC analysis ranking.

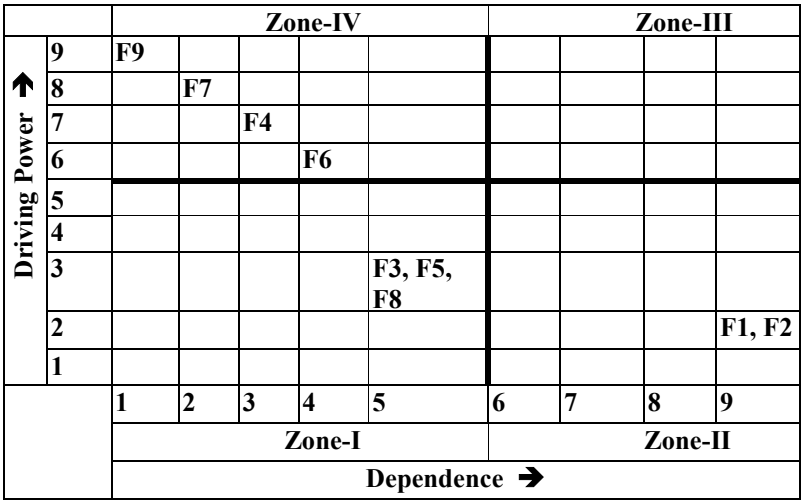

Figure 2. MICMAC graph

5. Managerial/ Practical Implications

The study's results may be useful to regulators who are considering making online teaching and evaluation a routine practice in the near future. The hurdles that have been found should be considered ahead of time, and a roadmap can be created to ensure that online teaching and evaluation runs smoothly. The teacher's obstacles to online teaching should be considered, and the syllabus and exams can be prepared accordingly. Once the situation has returned to normal, the findings of this study may be used to prepare teachers in the future. Rather than trying to balance the different variables using simplistic logic, using the results of the TISM model also improves the likelihood of more efficient use of resources.

6. Conclusion

The Covid-19 pandemic has pushed the educational system to become more tech-savvy. While it is clear that online classes cannot replace traditional teaching methods. The role of institutional support technologies in online teaching is clearly demonstrated in this paper. It is necessary to have an exclusive department dedicated to improving the institution's technical infrastructure in order to imbibe technology-driven teaching in real or virtual environments. Lack of motivation, negative attitude, budget for institutional-supported technologies and lack of

technical support are the key or driving enablers in this model. The TISM approach was used in this paper to define the factors and create a model that contributes to a successful understanding of the factors affecting teachers in online teaching in the digital age. As a result, this model serves as a guide for regulatory authorities and educational institutions, highlighting the challenges that teachers face in the online mode of teaching, and assisting them in taking immediate and appropriate steps to resolve these challenges.

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Biographies

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