

# IMPACT OF PANDEMIC PERIOD OF COVID-19 ON ONLINE LEARNING AND TEACHING IN TEACHER EDUCATION

## IMPACTO DEL PERÍODO DE PANDEMIA DE COVID-19 EN EL APRENDIZAJE Y LA ENSEÑANZA EN LÍNEA EN LA FORMACIÓN DOCENTE

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## ABSTRACT

Online learning is an educational process which takes place over the Internet as a form of distance education. Distance education became ubiquitous as a result of the Covid-19 pandemic. Because of these circumstances, online learning and teaching had an indispensable role in teacher education programs, even though debates continue on whether or not it is beneficial for prospective teachers to be exposed extensively to Information and Communication Technology (ICT). This descriptive study demonstrates how a student teacher course in teacher education was redesigned to provide student teachers with opportunities to learn and practice through online. It reports experiences and reflections from a practicum course offered in the teacher education courses in the Tirunelveli. It describes three phases of the online student teachers' experiences Preparation, Implementation, and Reflection. Tasks accomplished in each phase are reported. Online teaching experiences provided these student teachers with opportunities to interact with others, as well as to encourage reflection on how best to promote prospective teachers development and learning with online communication tools.

**Keywords:** Educational technology. Online learning and teaching modes. Pandemic period. Student teachers. Teacher education.

## RESUMEN

El aprendizaje en línea es un proceso educativo que tiene lugar a través de Internet como una forma de educación a distancia. La educación a distancia se volvió omnipresente como resultado de la pandemia de Covid-19. Debido a estas circunstancias, el aprendizaje y la enseñanza en línea tuvieron un papel indispensable en los programas de formación de docentes, aunque continúan los debates sobre si es beneficioso o no para los futuros docentes estar expuestos extensamente a las Tecnologías de la Información y la Comunicación (TIC). Este estudio descriptivo demuestra cómo se rediseñó un curso de formación docente para estudiantes de magisterio para brindar a los estudiantes de pedagogía oportunidades de aprender y practicar en línea. Informa experiencias y reflexiones de un curso de práctica ofrecido en los cursos de formación docente en Tirunelveli. Describe tres fases de las experiencias de los estudiantes de magisterio en línea Preparación, Implementación y Reflexión. Se reportan las tareas realizadas en cada fase. Las experiencias de enseñanza en línea brindaron a estos estudiantes de magisterio la oportunidad de interactuar con otros, así como también alentaron la reflexión sobre la mejor manera de promover el desarrollo y el aprendizaje de los futuros docentes con herramientas de comunicación en línea.

**Palabras clave:** Tecnología educativa. Modos de enseñanza y aprendizaje en línea. Período de pandemia. Estudiantes de magisterio. Formación docente.

## 1 INTRODUCTION

A teaching practicum provides student teachers with authentic and hands on experience for teaching in classrooms. In teacher education, practicums provide student teachers with opportunities to apply their knowledge about learning and teaching development as well as about curriculum content. It supports the development of teaching skills to be effective teacher education, including dealing with various challenges which influence teaching efficacy in practice. A number of teaching practicums are usually required to be completed in course accreditation of teacher education programs. College classes moved online and remained closed for the rest of the academic year. Student teachers in practicum courses also had to discontinue teaching in schools. As an alternative to student teacher teaching, it was suggested that student teachers should observe videos of previous classrooms and present lessons to their colleagues through online. As an instructor and supervisor of a practicum course they considered the possibilities for the student teachers to teach through online. There are some difficulties felt in the implementation of the change process in the education system that has been arisen after pandemic period, these difficulties are related with the novel perspectives of online education and their technological complexities. Earlier to this pandemic, online education is considered as the education provided by the few institutions in India. But in the pandemic period, online learning and teaching became a massive challenge to deal with stakeholders are not potentially fit to adjust with the sudden educational change as they are not technologically competent to embrace the current situation. In the face of Covid-19, the shared vision of education system realized that during the pandemic period, faculties and student teachers are motivated to adapt online learning and teaching platforms in fulfilling the current educational needs. Either faculties or student teachers were friendly skilled in using social media applications which turned into smooth facilitation of using online educational platforms such as Teachmint, Zoom, Cisco WebEx, Google Meet etc. Also, there are some useful educational apps such as Google classroom, Microsoft teams, Brainly and much more user friendly videoconferencing app that can be downloaded free of cost and easy to use. It seems that there is no reason to get into a panic to get new technology all of sudden as some of the apps are already embedded in our teacher education institutions.

## 2 LEARNING AND TEACHING THROUGH ONLINE

Lockdown and social distancing measures due to the Covid-19 pandemic have led to closures of schools, training institutes and higher education facilities in most countries. There is a paradigm shift in the way educators deliver quality education through various online platforms. The online learning, distance and continuing education have become a panacea for this unprecedented global pandemic,

despite the challenges posed to both educators and the learners. Transitioning from traditional face to face learning to online learning can be an entirely different experience for the learners and the educators, which they must adapt to with little or no other alternatives available. The education system and the educators have adopted Education in Emergency through various online platforms and are compelled to adopt a system that they are not prepared for.

E-learning tools have played a crucial role during this pandemic, helping schools and universities facilitate student learning during the closure of universities and schools. While adapting to the new changes, staff and student readiness needs to be gauged and supported accordingly. The learners with a fixed mindset find it difficult to adapt and adjust, whereas the learners with a growth mindset quickly adapt to a new learning environment. There is no one size fits all pedagogy for online learning. There are a variety of subjects with varying needs. Different subjects and age groups require different approaches to online learning. Online learning also allows physically challenged students with more freedom to participate in learning in the virtual environment, requiring limited movement. As schools have been closed to cope with the global pandemic, students, parents and educators around the globe have felt the unexpected ripple effect of the Covid-19 pandemic. While governments, stakeholders, educationists, frontline workers and health officials are doing their best slowing down the outbreak, education systems are trying to continue imparting quality education for all during these difficult times. Many students at home have undergone psychological and emotional distress and have been unable to engage productively. The best practices for online home schooling are yet to be explored. The use of suitable and relevant pedagogy for online education may depend on the expertise and exposure to information and communications technology (ICT) for both educators and the learners. Some of the online platforms used so far include unified communication and collaboration platforms such as Microsoft Teams, Google Classroom, Canvas and Blackboard, which allow the teachers to create educational courses, training and skill development programmes. They include options of workplace chat, video meeting and file storage that keep classes organized and easy to work. They usually support the sharing of a variety of content like Word, PDF, Excel file, audio, videos and many more. These also allow the tracking of student learning and assessment by using quizzes and the rubric based assessment of submitted assignments.

The need to take account of student's developmental levels is necessary, as well as to find online learning tools, which are appropriate and which can promote student's participation and learning. Many video communication platforms are convenient tools for student's online learning. Such platforms allow for real time class meetings and conversations similar to those that take place in face-to-face classes, even though it still does not provide exactly the same social experiences as face to face interactions.

Prospective teachers may not have the efficient technology skills necessary for online learning tasks, such as typing responses into a chat screen or sharing files with written information. However, the different functions and tools of many video communication platforms can benefit student’s learning when faculties use them appropriately. Majority of stakeholders possessed smartphones and laptops are the needed resources to implement online learning and teaching. Government and its bodies were agreed upon implementing online education across the country, keeping in mind the need of the hour. Various national, state and university level bodies and associations were heartedly and hesitatingly supported the vision of online learning and teaching with the mix bags of opinion as a result of curiosity to trial new technology and the new mode of the learning and teaching process in the teacher education system. It is due to the lack of preparedness, orientation and incentives of stakeholders in using online mode of teaching. The action plan was prepared, keeping in view of our readiness for online teaching mode, drive for change in this pandemic and availability of resources for implementing online teaching mode. To go with the action plan, faculties prepared and trained themselves independently to be accustomed to the technology required in using online teaching modes. At the college level, system administrator and ICT experts provided necessary assistance to stakeholders and managing the change process. Hence, the researcher insightfully gets interested in doing this study with the following objectives.

**Table 1 - Represents data of faculty respondents with their age and gender**

Gender	Female	Male
No. of faculty members	40	35
Age > 45	34	25
Age < 45	6	10

**Table 2 - Represents data of studentteachers respondents with their age, gender and year of study**

Gender	I Year		II Year	
	Female	Male	Female	Male
Age range 21 – 30	98	90	80	71
Age range 31 – 40	9	4	14	6
Age range < 40	3	1	7	2

### 3 OBJECTIVES

1. To reveal the various forms of online learning and teaching ways adopted during Covid-19 pandemic.
2. To study the perceptions of faculties and student teachers on online learning and teaching during Covid-19 pandemic.
3. To examine the challenges faced by the faculties and student teachers in adapting to the online learning and teaching process during Covid-19 pandemic.

### 4 LITERATURE REVIEW

#### 4.1 METHODOLOGY

The researcher used both quantitative and qualitative methodologies to study the perceptions of stakeholders based on the online learning and teaching process in teacher education colleges during the pandemic period. This study is delimited to Tirunelveli district.

#### 4.2 POPULATION AND SAMPLE

All faculties and student teachers from Teacher Education of Tirunelveli district were the populations of the study. Faculties and students from each college selected as sample for the quantitative study using disproportional stratified sampling. Ten out of seventeen were chosen for the present research keeping the availability of the teaching faculties and students. Thus, the total of seventy five faculty members and three hundred thirty nine student teachers participated as a sample in a descriptive survey to assess their perspectives towards online learning and teaching. Teacher's age and gender are given in Table 1. All the respondent faculties are Indian nationality residing in Tirunelveli and other districts. Likewise, all the student teacher respondents are enrolled in regular mode of instruction with Indian nationality living in Tirunelveli and other districts.

#### 4.3 PROCEDURE OF DATA COLLECTION

The researchers for quantitative analysis developed two questionnaires to study the perception of faculties and student teachers separately on online learning and teaching. Because of pandemic period, the researchers collected data through online mode through Google forms. Their experiences, perceptions and reflections regarding the on-going online learning and teaching process were consolidated for qualitative analysis. All the sample respondents extended their full co-operation by responding to the questionnaire. Valuable feedback and suggestions were gathered through Google forms. Data obtained

from the various sources were analysed by using the descriptive statistics for quantitative data and content analysis for qualitative data.

## 5 FINDINGS

This section presents objective wise findings derived after percentage analysis and content analysis.

### 5.1 FINDINGS RELATED TO OBJECTIVE ONE

To get the findings of objective one, researchers conducted a survey study in which percentage analyses have been done to reveal the different types of online learning and teaching modes adopted by the faculties and students teachers during the pandemic period.

Table 3 portrays the details of the varied modes of online learning and teaching modes being used by the faculties and student teachers during the pandemic period of COVID-19 outbreak.

Interestingly, despite having a variety of digital modes of teaching-learning, almost all the faculties and student teachers both were using Whatsapp/ Telegram and Email for educational interactions, submission of assignments, clarification of doubts and conducting class tests. There were 33% of teachers using Google classroom and 44% teachers using Zoom/ Life size / Cisco WebEx/Google Meet/Skype platform for taking online classes, but the recipient students were found only 21% and 14% respectively. 25% of faculties conducted Webinars as online teaching while 34% of students were attended college's webinars and outside the college's webinars for enriching themselves widely as an online learning and teaching. There were 49% of faculties recorded their lectures on YouTube as teaching through online mode, whereas 27% of student teachers watched presentations and recorded videos of all sources on YouTube.

YouTube and Facebook streaming as a means of online classes taken by the faculties found significantly very low with 6%, whereas 17% of students admittedly found using these online platforms for learning. 86% of faculties were found using mobile conversation for educationally get connected with their students in relation to giving and receiving information. Still, student teachers tend to feel hesitant to call their faculties, and the percentage found only 22. Some faculties (33%) showed an ardent interest in the pursuit of using the new technological tool of online teaching such as Swayam Prabha educational DTH channels with 10% only but student teachers were found a little bit impressive 26% using this digital tool for online learning; actually, Swayam Prabha is a government's educational DTH platform consisting 32 channels dedicated to telecast content for at least 4 hour every day which would be repeated five more times in a day.

**Table 3 - Table showing different modes of online teaching modes used by the faculties and student teachers**

S.No.	Modes of online learning and teaching	% of faculties using online teaching modes	% of student teachers using online learning modes
1.	Google Classroom	31	19
2.	Zoom / Life size / Cisco WebEx / Google Meet / Skype	44	14
3.	Webinar	24	34
4.	Youtube Videos	49	27
5.	Youtube / Facebook streaming	5	17
6.	Whatsapp / Telegram	100	100
7.	Mobile Conversation	86	22
8.	Email	100	100
9.	Swayam Prabha DTH educational channels	10	26

## 5.2 FINDINGS RELATED TO OBJECTIVE TWO

To get the findings of objective two, i.e. to study the perceptions of faculties and student teachers on online learning and teaching during COVID-19 pandemic, the content analysis of the questionnaire on the perception of faculties and student teachers over online learning and teaching has been done. Besides, through Google forms, researchers also collected detailed information of the online learning and teaching process. The teacher education college's from Tirunelveli district has a clear vision about implementing the online learning and teaching and thus encouraged faculties and student teachers to do the needful in this regard. The Tamilnadu Teachers Education University and Directorate of Collegiate Education, Tamilnadu substantially made the righteous decision at the right time for inclusion of all the stakeholders in online learning and teaching mode that depends upon the change of mind set for the organisational authorities along with the educators to adapt to the technology-based teaching as stated by the some of the faculties. Faculties and student teachers of Teacher Education College from Tirunelveli district were cooperative in implementing online learning and teaching and agreed upon that there is no alternative way of education in this pandemic period.

Due to the authorities' encouragement and motivation, it was found that the teacher education college's from Tirunelveli district has been managing it capably in the present context. The teacher education colleges from Tirunelveli district needs more technical preparedness itself with necessary online



educational resources and training programmes for both faculties and student teachers; it's challenging to manage it on a long-term basis. Virtual classroom experience, patience, empathy, care for students, excellent presentation skill with addressing to the point of a given topic, proper handling of learning and teaching tools available with user friendly features were the additional skills found to manage online learning and teaching process. The ICT centre of the teacher education colleges from Tirunelveli district has conducted several online sessions for familiarization with online tools, techniques, processes and platforms with question and answer sessions.

Besides, faculties attended technologybased learning and teaching programmes conducted by various institutions during the lockdown period. Some of the respondent faculties revealed that they had already done MOOCS training courses much before this pandemic. It was found that patience on the part of all the stakeholders including the faculties, students, academic administrators, and ICT staff would go a long way in managing the transition. Faculties developed their action plans for online learning and teaching that were a little bit different from one to one. Approximately 4 periods per day were the average times spending on online classes, as mentioned by the students. On an average student responded that they use 1.5–2.0 GB data per day as it was in their affordable prepaid plan. Further, consequently, when the maximum data limit used by the students, they felt helpless to continue online classes. Students' perceptions reflected that teachers should create friendship and enlighten the environment of the groups, apps or any platform. Expansion of ICT facilities is to be promoted practically to make this kind of situation a better handle. The most crucial teaching skill that needs to be developed is making learning personalized experience for the students even when it is happening online as narrated by some of the students. Awareness of parents was also perceived as pre-requisite in this transition phase of the change process and this adaptation will gradually improve by the time passing.

### 5.3 FINDINGS OF THE OBJECTIVE THREE

To get the findings of objective three i.e., to examine the challenges faced by the faculties and student teachers in adapting to online learning and teaching.

Learning and teaching process during COVID-19 pandemic, teachers' responses and students' responses on online teaching-learning were collected through perception survey via Google forms during the lockdown period. It was found that most of the faculties somehow encountered with similar kinds of challenges and issues. The major challenge while teaching online was the unstable internet connection. If the videos and audios of the student teachers were kept off, the connection remains more stable, but that mode of teaching seems to teach to a blank wall. Most of the challenges were related to the student teachers and their responses to the needs of online learning and teaching, which include uninterrupted

electricity connection, intermittent internet issues. It was found that faculties were unable to read the face and mood of student teachers and thus difficult to change the teaching pattern.

Some of the faculties expressed their grave concerns over the practicum activities for the II Year student teachers during the pandemic period and demanded simulation techniques in practicum. It was found that some faculties were in a dilemma as they were not sure whether the student teachers switched on the computer / mobile for the namesake or actively present at the moment or sitting somewhere, no clue about the active participation. It was found that the most students came from remote areas of Tirunelveli district with low socio economic level of the family. Therefore, during the pandemic period when they needed the highly configured internet connection for online learning but they could not do so as they did not have highly configured internet connection at home to participate in online classes. Besides, during the lockdown period at home, both male and female student teachers were struggling with financial problems as well. Some of the female students accepted that they did not have peaceful learning environment at home and they were assigned in household chores during the pandemic period, consequently, their learning were adversely affected and left them. Since online learning and teaching in pandemic was a new experience for both faculties and student teachers and therefore they pointed out about the stressful situation they were involved in. But they appreciated the initiative taken by the college administration regarding online classes and other services like counselling services. Additionally, faculties accepted that they were unable to resolve the doubts of student teachers completely and fulfil student teachers' satisfaction level.

## 6 DISCUSSION

This paper intended to study the perception of faculties and student teachers on the online learning and teaching process during the pandemic period. While keeping the theoretical views at the base the research provides varied perspectives on the challenges facing online learning and teaching today. The mixed methods study examined perceptions of faculties and student teachers keeping at teacher education colleges from Tirunelveli district in new context. New insights bring out to the forefront while understanding faculties and student teachers perceptions about the new trend. It is found that Colleges' initiative for online learning and teaching mode of instruction commenced through the instructions received from Government and its agencies. College's preparedness was geared up in respect of new techno-academic blending to a greater extent. Students faced various problems like internet connectivity and video issues due to the remoteness of their location. Again, several available online learning and teaching tools like Zoom, Life size, Google Meet, Facebook and YouTube streaming available for both

faculties and student teachers were put to needbased use. Most of the faculties were trained by colleges who gained handson experiences. The differences between online and face-to-face mode of learning and teaching could be deliberated during the training. Due to pandemic period, faculties intended to use whatsapp, email and mobile conversation for imparting teaching. But gradually, as the pandemic period went on being extended from time to timewhatsapp, email and mobile conversation proved inadequate. Student teachers and faculties started installing online learning platforms such as Zoom, Life size, Google meet, Telegram, LinkedIn learning and many more to widen their learning and teaching process. The majority of the faculties were found themselves using Whatsapp and Google Classroom as a mode of online curriculum conversation. Due to the slow internet connectivity, faculties agreed to have been predominantly dependent on Whatsapp and Google Classroom. Some faculties shared readable lecture handouts and others gave full reference books, for reading. Teaching conversations went on online without fixing the accountability on the teachers regarding the exact online platform used by them. Most of the student teachers home located at remote rural setups without stable internet high configuration connectivity or broadband services and compatibility issues with regard to full duplex mode interaction.

Faculties used to get regular feedback from student teachers about the positives and negatives of online teaching transaction and continued to work until the desired quantum of student's satisfaction. Student teachers and faculties of the Colleges are informed regularly regarding examinations and other academic events by the authorities through emails and other online messenger groups. Data from this research revealed that there has been a greater realization of the time-bound relevance and criticalities of online learning and teaching mode during the pandemic period. As a time suited gap mechanism for meeting the demands under pandemic period, online teaching has been implemented as a viable alternative well within its limits and limitations. It may take time to realize how the panic attempts of online learning and teaching meet the need of net balance of aggregate consequences. Finally, there is a bridge the gap between the haves and haves not, remote rural and urban living as student teachers come from different socio-economic backgrounds and applying the same pedagogical approach. Misunderstanding of the individual differences of student teachers may result in biased conclusions specifically as online learning and teaching mode, which may not meet its desire end.

## 7 CONCLUSION

Globalization of education has been deteriorated remarkably due to limited mobility and limitedly confined exchange programmes of academic activities among the countries during the pandemic period. Many countries are facing policy paralysis in handling the sudden shifting scenario of educational planning,

management and organization during this pandemic with their fractured technical infrastructure, academic incompetency and lack of resources; especially among them, low and middleincome countries would suffer the setbacks most as they were already running out of finance. But noticeably everyone must learn to live and survive with the present crisis as it is the beginning only; in the long run, no can afford the negligence towards digital transformation in teacher education institutions. To develop multimodal approaches to achieve course content objectives for better learning outcome can be a better idea to deal with the complexity of online education. Undauntedly, the governments must ensure the availability of reliable communication tools, high quality digital academic experience, and promote technology-enabled learning for students to bridge the disparities originated in the education system before and after pandemic period catastrophe which is also inevitably necessitated for uninterrupted learning. Few steps should be accounted in the wake of this pandemic; to develop such a curriculum that reflects the perceptible change in the content knowledge and learning experience of students as well as enable them to think critically.

#### **DECLARATION OF CONFLICTING INTERESTS**

The authors declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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