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## CHALLENGES FACED BY PROFESSORS IN ONLINE TEACHING DURING COVID-19 PANDEMIC WITH SPECIAL REFERENCE TO MADURAI DISTRICT OF TAMILNADU

**Dr. S. C. B. SAMUEL ANBUSELVAN**

Associate Professor of Commerce,  
The American College,  
Madurai

&

**K. DEEPTHI NIVASINI**

Assistant Professor of Commerce,  
Thiagarajar College,  
Madurai

### *Abstract*

*The COVID-19 pandemic forces educational institutions in and around the country, to make its courses available online. The pandemic is making it less possible for professors to physically be available in classrooms. With each level of education, facing its own challenges in the midst of the pandemic more importance has to be given to the higher level of education. Both students and professors are expected to be technology-savvy for the education process to be successful. The study is conducted with an aim to identify the challenges faced by professors in assessing the academic performance of the students. The primary data is collected using questionnaire from commerce professors of different colleges in Madurai District of Tamilnadu. Secondary data from various sources have been reviewed and conclusions are drawn based on the analysis of previous studies. Percentage analysis, Factor Analysis and Likert's scaling technique is used to analyse data*

**Keywords:** COVID-19, pandemic, online teaching, screen time, eye strain, connectivity issues, virtual classrooms.

### **Introduction**

The COVID-19 pandemic situation has rendered the educational institutions closed mandatorily by the government. Online teaching has become the solution to various educational institutions offering continuity and access

to quality education during this pandemic. With the rise of online teaching, activities like teaching, learning, acquisition of study material, sharing of resources and evaluation of academic performance are carried out remotely on digital platforms. Though various teaching methodologies

are followed by professors in communicating concepts to students through online mode, they also face certain challenges. The researcher aims to identify the factors influencing the quality of online teaching during this pandemic and analyse the challenges faced by professors in online teaching during this pandemic.

#### STATEMENT OF THE PROBLEM

Professors and teachers have begun adapting themselves to an almost universal distance education as nearly 94 per cent of students have faced school and college closures. Many educational institutions have embraced this challenge, although in many developing countries professors and teachers lack the skills and equipment to provide distance education effectively. There is an immediate need for the education sector, to adapt and evolve technologically to cater to the needs of students during this COVID-19 pandemic. (ILO 2020)<sup>1</sup>. With every level of education, facing its own unique challenges, more emphasis is to be given to the higher education systems which are responsible for the major educational revolution in online teaching during this pandemic<sup>2</sup>. Hence, the researcher aims to ascertain the circumstances and challenges undergone by professors while imparting education through online teaching.

#### REVIEW OF LITERATURE

**Azzi-Huck & Shmis (2020)** in their study state that, all stakeholders, institutions, teachers, publishers, and parents have joined hands together to create digital resources like textbooks and learning materials, so that they could be delivered through virtual classrooms<sup>3</sup>.

**Pudasaini (2020)** in her study acknowledges “four categories of special needs learners that revolve around parental literacy levels, atypical living situations, physical/mental abilities and learning needs.” This requires, a comprehensive framework to address each type of students is needed<sup>4</sup>.

**Mohamedbhai (2020)** in his study points out that it is a fallacy to believe that online learning can be effective by merely posting a lecturer’s notes online or having a video recording of the lecture. Yet, this is what is generally happening at present during the pandemic. Online learning requires that the teaching material is prepared by a professional instructional designer, that the lecturer is pedagogically trained for delivering the programme and the students are equally exposed to the pedagogy of online learning. The unprepared online delivery will have an impact on the quality of the educational programmes<sup>5</sup>.

#### OBJECTIVES OF THE STUDY

1. To ascertain the socio-economic profile of the respondents.
2. To analyse the factors influencing the quality of online teaching during this pandemic.
3. To identify the challenges faced by professors in online teaching during COVID-19 pandemic in Madurai district of Tamilnadu.
4. To offer findings, suggestions and conclusion to the study.

#### METHODOLOGY

The researcher aims to ascertain the quality of online teaching and the challenges faced by professors in online teaching during this COVID -19 pandemic. The study is conducted among the Commerce Professors of various colleges in Madurai district. The sample size of the study is 60. Purposive sampling technique is used in the study. Quantitative data was collected from professors using questionnaire. Since the study has its own predetermined objectives and methodology, it is both descriptive and analytical in nature. The data were analyzed using the Statistical Package for the Social Science (SPSS). The statistical tools used for the analysis of data in this study are inferential statistics, Factor analysis and Likert’s Scaling technique.

**DATA ANALYSIS****Socio-economic profile of the respondents**

Socio-economic variables such as age,

gender, educational qualification, income, and marital status indicate the socio-economic profile of the respondents.

**Table 1****Socio-economic profile of the respondents**

Variables	Characteristics	Respondents (In Percentage)
Age	20-30 years	43.33
	30-40 years	30
	40-50 years	21.67
	Above 50 years	5
Gender	Male	35
	Female	65
Educational Qualification	Master's Degree	23
	M. Phil	33.33
	Doctorate	41.67
	Others	2
Monthly Income	₹10,000-20,000	53.33
	₹20,000-30,000	16.67
	₹30,000-40,000	8.33
	Above ₹40,000	21.67
Marital Status	Married	61.67
	Unmarried	38.33

Source: Primary data

Table 1 shows the socio-economic profile of the respondents which reveals that 43.33% of the respondents are between the age group 20-30 years of age. 41.67% of the respondents have

completed their Doctorate. More than half of the respondents earn a monthly income of below ₹ 10,000 – ₹20,000 (53.33%) are females (65%) and are married (61.67%).

**Table 2****Mode preferred by professors for online teaching**

S. No	Modes of Online Teaching	No. of respondents	Respondents (In Percentage)
1	Google Meet	37	61.68
2	Microsoft Team	8	13.33
3	WebEx	2	3.33
4	Zoom	11	18.33
5	Others	2	3.33
	<b>Total</b>	<b>60</b>	<b>100</b>

Table 2 shows the various modes of online teaching preferred by professors for online teaching. The table reveals that Google meet (61.68%) is the most

preferred mode of online teaching followed by Zoom (18.33%), Microsoft team (13.33%), WebEx (3.33%) and other modes (3.33%).

**Table 3**

**Ranking of the Challenges faced in online teaching using Likert's scaling Technique**

Challenges	*Total Score	**Mean Score	Rank
More screen time causes head ache and eye strain	268	4.666	I
Internet connectivity issues	265	4.416	II
Creativity of the physical classroom is lacking in online teaching	259	4.316	III
Individual care for every student is not possible	258	4.300	IV
Long hours with technology causes stress, fatigue and mental exhaustion	255	4.250	V
Student Counselling done online is not very effective	252	4.200	VI
Follow up on Academic and co-curricular activities of students is difficult	249	4.150	VII
Cost of data for online classes	248	4.130	VIII
Student misbehavior in online classes	239	3.980	IX
There is discomfort and I feel lost while adapting to technology in online teaching	211	3.520	X

\*Total Score = (SA× 5) + (A ×4) + (NO×3) + (DA×2) + (SDA×1)

\*\*Total Score /No. of respondents

Source: Primary data

Table 2 indicates the ranking of the challenges faced in online teaching using Likert's scaling technique. 'More screen time causes head ache and eye strain' was reported to be a major challenge in online teaching and thus it ranked first with the mean score of 4.666 followed by 'Internet connectivity issues' which ranked second with the mean score of 4.416 and 'Creativity of the physical classroom is lacking in online teaching' ranked third with a mean score of 4.316. 'Individual care for every student is not possible' with the mean score of 4.300 and 'Long hours with technology causes stress, fatigue and mental exhaustion' with the mean score of 4.250 got the fourth and fifth ranks respectively. 'Student Counselling done online is not very

effective' with the mean score of 4.200 ranked sixth. The challenges like 'Cost of data for online classes' with the mean score of 4.130 and 'Student misbehavior in online classes' with the mean score of 3.980 have less impact on online teaching during this pandemic thus got the seventh and eighth ranks respectively. 'There is discomfort and I feel lost while adapting to technology in online teaching' with the mean score of 3.520 got the last rank.

**KMO and Bartlett's Test**

The Kaiser-Meyer-Olkin is a measure of sampling adequacy. The results of KMO and Bartlett's test is given in Table 3

**Table 3**  
**Factors influencing the quality of online teaching - KMO and Bartlett's test**

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.795
Bartlett's Test of Sphericity	Approx. Chi-square	436.897
	Df	120
	Sig.	.000

Source: Primary data

From table 3 it is clear that the KMO value of .795 (>0.5) was found to be acceptable, the Bartlett's test of Sphericity yields a high Chi-square value of 436.897, and a significance level of 0.000 which is also under the acceptable

limit of 0.05. Thus, both the tests used have verified that the data are appropriate for performing factor analysis.

**Principal Component Method of Extraction**

The factor extraction process helps to identify how many factors can be extracted from the data. The rotation sums of squared loadings shown in the table represent the distribution of the variance after the varimax rotation. The first factor accounts for the most variance and hence has the highest Eigen values. The percentage of variance represents the percent of total variance accounted by each factor and the cumulative percentage gives the cumulative percentage of variance accounted by the present and the preceding factors. The factors influencing the quality of online teaching were analysed in table through factor analysis using 16 variables, which were reduced to 4 underlying factors.

**Table 3.1**  
**Initial Eigen Values and Variance Table**

Component	Total Variance Explained								
	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.440	40.250	40.250	6.440	40.250	40.250	3.811	23.817	23.817
2	1.479	9.246	49.496	1.479	9.246	49.496	2.543	15.891	39.708
3	1.308	8.174	57.670	1.308	8.174	57.670	2.376	14.852	54.561
4	1.147	7.171	64.841	1.147	7.171	64.841	1.645	10.280	64.841
5	.895	5.596	70.436						
6	.847	5.292	75.728						
7	.728	4.552	80.280						
8	.610	3.815	84.095						
9	.516	3.222	87.317						
10	.454	2.835	90.152						
11	.403	2.517	92.669						
12	.325	2.031	94.700						
13	.278	1.740	96.441						
14	.250	1.565	98.005						
15	.183	1.142	99.147						
16	.136	.853	100.000						

Extraction Method: Principal Component Analysis.

Source: Primary data

Table 3.1 shows the total variance explained listing the Eigen values associated with each component before

extraction, after extraction and after rotation. In using Kaiser's criterion, the component Eigen value should be 1 or

more in the total variance. In this study, only the first four components recorded Eigen values above 1. These four components explain a total of 64.841 percent of variance.

### Varimax rotation method with Kaiser's Normalization

The varimax rotation maximizes the loading of each variable on one of the extracted factors while minimizing the loading on all other factors.

Table 3.2

### Summary of Exploratory Factor Analysis Results (N = 60)

Rotated Component Matrix <sup>a</sup>				
Variables	Component			
	1	2	3	4
Norms and values of the organization are maintained in online teaching	<b>.783</b>	.161	.177	.184
The level of commitment of professors in online teaching creates interest among the students	<b>.723</b>	.070	.299	.206
Students can be motivated to contribute their ideas and Independent learning can be encouraged	<b>.718</b>	.144	.188	.084
Collaboration among professors has improved in online teaching	<b>.704</b>	.242	.126	-.016
Healthy interaction and discussion are possible in online teaching	<b>.654</b>	.392	-.062	.044
Student's with different learning capabilities will be benefited through online teaching	<b>.625</b>	-.033	.334	.442
Different teaching methodology can be adopted for different subjects	<b>.622</b>	.316	.223	-.252
Resource sharing becomes easy among professors	.193	<b>.726</b>	.187	.048
The role played by internet connectivity during the pandemic is vital in online teaching	.247	<b>.724</b>	.193	.025
Study material can be shared over different online platforms with ease	.177	<b>.719</b>	.343	.217
Assessing and Monitoring Student Attendance in online classes can be done with high accuracy	.094	.257	<b>.717</b>	-.182
Quality teaching and learning materials can be curated	.179	.499	<b>.671</b>	.134
Student's level of understanding of the topics taught can be ascertained	.364	.082	<b>.648</b>	.235
Student Assignments can be collected with ease and on time	.345	.138	<b>.643</b>	.350
Distance learning reinforces teaching and learning approaches that we know do not work very well	.051	.091	.177	<b>.834</b>
Video-conferencing apps like Zoom and WebEx are becoming the lifeline of online teaching	.181	.510	-.140	<b>.571</b>
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 13 iterations.				

Source: Primary data

Table 3.2 represents the rotated component matrix. The variables 'Norms and values of the organization are maintained in online teaching', 'The level of commitment of professors in online teaching creates interest among the students', 'Students can be motivated to contribute their ideas and Independent

learning can be encouraged' 'Collaboration among professors has improved in online teaching' 'Healthy interaction and discussion are possible in online teaching' 'Student's with different learning capabilities will be benefited through online teaching' and 'Different teaching methodology can be adopted for



different subjects' have a high loading of .783, .723, .718, .704, .654, .625 and .622 respectively on factor I representation. Thus, factor I is named as "Academic Progress". On factor II, it is evident that the variables 'Resource sharing becomes easy among professors', 'The role played by internet connectivity during the pandemic is vital in online teaching' and 'Study material can be shared over different online platforms with ease' are loaded as .726, .724 and .719. So, factor II can be named as "Connectivity". On factor III, the variables 'Assessing and Monitoring Student Attendance in online classes can be done with high accuracy', 'Quality teaching and learning materials can be curated', 'Student's level of understanding of the topics taught can be

ascertained' and 'Student Assignments can be collected with ease and on time' have loadings of .717, .671, .648 and .643 respectively, therefore factor III is named as "Follow up". The factor IV consists of variables like 'Distance learning reinforces teaching and learning approaches that we know do not work very well' and 'Video-conferencing apps like Zoom and WebEx are becoming the lifeline of online teaching' having factor loadings of .834 and .571 and this factor is named as "Communication".

#### Factors derived from Factor variables:

The factors identified with variables that influence the quality of online education are presented in table.

**Table 3.3**  
**Factors derived from factor variables**

Factors	Variables
<p style="text-align: center;">Factor I Academic Progress</p>	<p>Variable 13: Norms and values of the organization are maintained in online teaching            Variable 15: The level of commitment of professors in online teaching creates interest among the students            Variable 16: Students can be motivated to contribute their ideas and Independent learning can be encouraged            Variable 6: Collaboration among professors has improved in online teaching            Variable 7: Healthy interaction and discussion are possible in online teaching            Variable 11: Student's with different learning capabilities will be benefited through online teaching            Variable 8: Different teaching methodology can be adopted for different subjects</p>
<p style="text-align: center;">Factor II Connectivity</p>	<p>Variable 2: Resource sharing becomes easy among professors            Variable 12: The role played by internet connectivity during the pandemic is vital in online teaching            Variable 10: Study material can be shared over different online platforms with ease</p>

Factor III Follow up	Variable 1: Assessing and Monitoring Student Attendance in online classes can be done with high accuracy Variable 3: Quality teaching and learning materials can be curated Variable 9: Student's level of understanding of the topics taught can be ascertained Variable 14: Student Assignments can be collected with ease and on time
Factor IV Communication	Variable 4: Distance learning reinforces teaching and learning approaches that we know do not work very well Variable 5: Video-conferencing apps like Zoom and WebEx are becoming the lifeline of online teaching

## FINDINGS

- From the foregone analysis, it is found that 43.33% of the respondents are between the age group 20-30 years of age. 41.67% of the respondents have completed their Doctorate. More than half of the respondents earn a monthly income of below ₹ 10,000 – ₹ 20,000 (53.33%) are females (65%) and are married (61.67%).
- Google meet (61.68%) is the most preferred mode of online teaching.
- The results of factor analysis used for identifying the factors influencing the quality of online teaching show that there are four factors that influenced the quality of online teaching – namely Academic Progress, Connectivity, Follow up and Communication.
- The results of the study show that among the various challenges encountered by the respondents, 'More screen time causes head ache and eye strain' with the mean score of 4.666 ranked first followed by 'Internet connectivity issues' with the mean score of 4.416. 'There is discomfort and I feel lost while adapting to technology in online teaching' with the mean score of 3.520 got the last rank.

## SUGGESTIONS

- ❖ Both professors and students can limit their screen time by taking

their time away from technology at regular intervals.

- ❖ The government can provide data at low cost for educational purposes.
- ❖ More emphasis can be made on handling classes in face to face mode during online teaching to ensure the attendance and involvement of students
- ❖ Classes taught online could be recorded for further use in future, saving time and energy of both professors and students.

## CONCLUSION

College professors are expected to keep themselves abreast of the trends in the education sector and be capable of adapting themselves to the various tech-savvy methods of online teaching. Study materials during this pandemic comprises of videos, web links and resources shared over Google classroom, etc. In short, this is the new 'normal' in the education sector post COVID 19. The organisations which adapt to this kind of online education system survive the race where everyone is digitally connected, though socially distanced.

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