Original Article

DOI: 10.7860/JCDR/2022/57858.17088

Community Section

Traditional Classroom Teaching versus Online Teaching in COVID-19 Pandemic: Perspective and Experiences of School Teachers in Northern India

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ABSTRACT

Introduction: Coronavirus Disease 2019 (COVID-19) pandemic affected everyone across the globe. The complete lockdown was imposed worldwide to cut down the chain of transmission. During lockdown, the decision was taken to shift from classroom teaching to online application (app)-based teaching. Numerous studies have documented that compared to classroom teaching, online teaching possesses various challenges both for teachers and learners.

Aim: Assessment of perception of the school teachers regarding online teaching compared to traditional classroom teaching.

Materials and Methods: A cross-sectional study was conducted among 100 school teachers of various government and private schools in Northern India from November 2020 to December 2020. An online questionnaire (English language) was used for assessing school teachers' perspectives and experiences of online teaching compared to traditional classroom teaching and was designed on the basis of 5-point Likert scale. Informed consent was obtained before the data collection. Data analysis was done using Microsoft Excel 2019 software.

Results: Among the 100 school teachers who participated in the study, 74% were females and the majority of study participants i.e. 69% were in the age group 31-50 years. Overall, 86% agreed that the online method is a supplement and not a replacement for traditional classroom teaching. Only nine teachers were fully satisfied with online teaching methods. The difference in school teachers' perceptions was found to be statistically significant (Paired t-test) while comparing classroom teaching to online teaching on various variables viz-teachers satisfaction, students' feedback, students' punctuality, and learning experience.

Conclusion: Classroom teaching provides more opportunities to monitor students' progress, learning, assessment, feedback and discussion, and online teaching can also be used to supplement classroom teaching as and when required.

Keywords: Assessment, Classroom education, Coronavirus disease-2019, Online education

INTRODUCTION

The Coronavirus Disease 2019 (COVID-19) pandemic had a huge impact globally [1-3]. During the pandemic, in India complete lockdown was imposed in March 2020 to stop the chain of transmission of COVID-19 [4]. Education is one of the important sectors which have been affected globally [5]. Closure of schools and colleges have affected the academic progress of students. As an emergency response, various online teaching methods were explored and implemented in schools and colleges in India also. During the lockdown, classroom teaching in school was replaced by online teaching by use of various apps like Zoom, WebEx, Google Meet, etc [6,7]. Although online teaching is different from traditional classroom training but was the only solution available. It was implemented throughout the country to continue learning in schools and colleges. This sudden shift was a new experiment for both teachers and students, but it also gave us a new direction for further advancement in teaching methods [6]. During pre-pandemic era, online teaching methods were used only in higher education institutes and their use was very limited and for a short duration, so multiple challenges related to online teaching were never identified.

In the pre-pandemic era, teachers, especially school teachers were not used to take online lectures and were not familiar with e-learning [7]. During the pandemic time, it was challenging for school teachers as well as school students to shift to a new method of teaching/learning, but since it was a need for both teachers and learners, so everyone has to shift to online mode of teaching [8,9]. Although lockdown restrictions have been taken back and schools have opened again and classroom teaching has again resumed, whatever usefulness of online teaching this pandemic has provided globally cannot be ignored. School teachers and students have utilised the online platforms for learning on daily basis for more than a year [8,9]. With this background, school teacher's experiences and perceptions about online teaching need to be explored for further improvement in teaching methods and hence, this study was conducted on school teachers to explore their perceptions and experiences about online teaching compared to traditional classroom teaching.

MATERIALS AND METHODS

A cross-sectional study was conducted among 100 school teachers of four government and 12 private schools in northern India from November 2020 to December 2020. Locations of schools were selected as per convenience of the principal investigator. Teachers from different schools were enrolled as per snowball sampling methods and as per the information and convenience of the principal investigator. Teachers' permission was obtained before they participated in the study by informed consent (online). The sample size was taken as 100 as per the convenience and time duration devoted to the study. An online questionnaire was provided to them. This study involved online data collection and all ethical practices were followed during this study.

Inclusion criteria: Those school teachers, nursery to 12th, of northern India, with teaching experience of more than 3 years and willing to participate in the study, were included.

Exclusion criteria: College teachers were excluded from the study.

Questionnaire

Semi-structured questionnaire of 35 questions in Google Forms was used to collect data. The questionnaire was prepared with information

retrieved from published literature on a similar topic [8-10]. The questionnaire was designed in the English language to explore the various perceptions of school teachers while comparing online teaching methods with traditional classroom teaching. The study questionnaire was then shared with study participants using Google Forms. The first page of the Google Forms was the informed consent form and only after submitting that the rest of the form was accessible to the study participants. For a comparative assessment of online teaching with classroom teaching, the semi-structured questionnaire was pretested on five school teachers, and their feedback was incorporated into the final questionnaire, which was revised and validated based on feedback received through the pilot study. A total of 17 questions including 2 questions related to impact of long screen time on health were designed on 5-point Likert scale. Scoring was given to each response (1-Strongly Disagree and 5-Strongly Agree).

STATISTICAL ANALYSIS

The data was compiled and analysed using Microsoft Excel 2019 software. The data obtained was quantified in frequency and plotted on figures. An appropriate statistical test, Paired t-test was applied to identify the significant association ($p<0.05$) with different teaching methods.

RESULTS

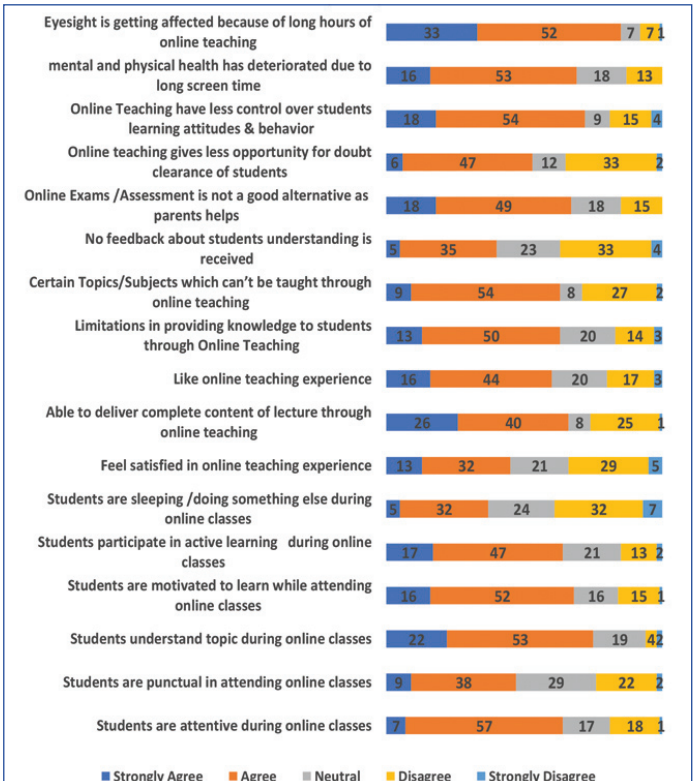
Among 100 school teachers who participated in the study, 74% were females and the majority of study participants (69%) were in the age group 31-50 years. As per the academic qualification of school teachers, 75% were postgraduates and 93% were teaching in private schools as they showed more willingness to participate in the study.

There was almost equal representation from teachers of all classes (Nursery to 12th). The majority of teachers (77) only specialized to teach one subject to students and 85 were using mobile phones to take online lectures as shown in [Table/Fig-1].

Parameters	Variable	Number (100)
Gender	Male	26
	Female	74
Age (years)	21-30	22
	31-40	33
	41-50	36
	51-60	9
Qualification	Graduate	22
	Postgraduate	75
	Doctorate (Ph.D.)	3
School	Government	7
	Private	93
Years of teaching experience	3 to 5 years	16
	>5-10 years	42
	11-15 years	16
	More than 15 years	26
Classes assigned to school teachers	Nursery, LKG, UKG	8
	Primary (1st-5th)	20
	Middle (6th-8th)	29
	Secondary (9th-10th)	20
	Senior secondary (11th-12th)	23
Subjects of school teachers	Science	8
	Social science	16
	Mathematics	17
	Hindi	32
	Computer science	3
	All subjects	7
	Others (Extracurricular)	17
Number of subjects taught by teachers	One subject	77
	Two subjects	12
	Three subjects	4
	Four subjects	7
Device used for teaching	Computer/laptop	13
	I Pad	1
	Mobile+laptop	1
	Mobile/Handheld device	85
Internet connection	Jio fibre	1
	Landline connection	2
	Mobile phone	86
	Modem	11

[Table/Fig-1]: Characteristics of study participants.

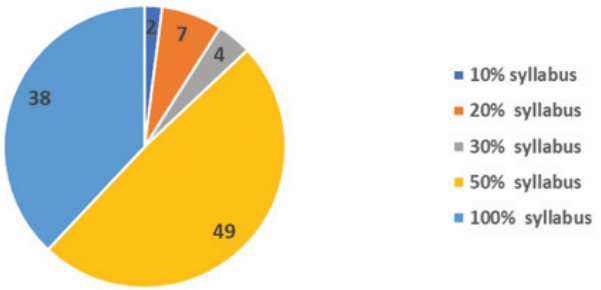
A total of 86% agreed that the online method is a supplement and not a replacement to traditional classroom teaching and 85% of teachers reported that their eyesight was getting affected because of the long duration of online teaching. In addition, 69% shared that their Mental and physical health was deteriorated due to long screen time. Apart from it, 94% of teachers perceived that they became more familiar with online teaching as there was no other alternative to impart training and 95% agreed that online teaching was very useful during the COVID-19 pandemic as shown in [Table/Fig-2].



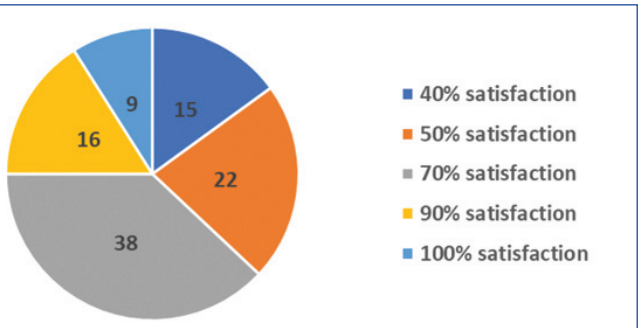
[Table/Fig-2]: Perception about online teaching among school teachers (n=100).

Regarding coverage of syllabus by online mode, 49% agreed that 50% of the syllabus can be covered online. Rest 51% of teachers' opinion was divided, as shown in [Table/Fig-3]. The satisfaction level of teachers in online mode was quantified and it was found that only nine teachers were 100% satisfied with online teaching methods as shown in [Table/Fig-4].

School teacher's perspectives and experiences were explored using 15 questions on a Likert scale as shown in [Table/Fig-5]. When attentiveness and punctuality is concerned, teachers agreed that traditional classroom teaching is significantly better compared to online teaching. Teachers believed and expressed that students have a better understanding of the subjects in classroom teaching and classroom teaching is significantly better compared to online teaching. Classroom teaching significantly motivates students and



[Table/Fig-3]: Teacher's perception regarding portion of syllabus which can be taught by online mode (n=100).



[Table/Fig-4]: Satisfaction level of teachers by online mode of teaching (n=100).

S. No	Question	Online teaching Mean±SD	Classroom teaching Mean±SD	t-test	p-value (Paired t-test)
1	The attentiveness of students during classes	3.50±0.93	4.17±0.67	-6.296	<0.05
2	Punctuality of students in classes	3.29±0.98	4.18±0.73	-7.490	<0.05
3	Understanding of the topics by students	3.89±0.86	4.16±0.68	-2.497	<0.05
4	Motivation of students to learn	3.66±0.98	4.05±0.67	-3.670	<0.05
5	Participation of students in active learning	3.64±0.98	4.11±0.71	-4.026	<0.05
6	Sleeping/doing something else during online classes	2.96±1.06	3.07±1.24	-.713	0.478
7	Satisfaction in teaching experience	3.19±1.14	4.25±0.69	-7.826	<0.05
8	Ability to deliver complete content of the lecture	3.64±1.17	4.320±0.7638	-5.224	<0.05
9	Teaching experience liked by teacher	3.53±1.05	4.36±0.61	-6.486	<0.05
10	Limitations in providing knowledge to students	3.56±0.99	2.81±1.13	4.913	<0.05
11	Certain topics/ subjects can't be taught	3.41±1.04	2.69±1.15	4.764	<0.05
12	Regarding feedback from students related to their understanding	3.04±1.02	4.17±0.69	-9.595	<0.05
13	Exams/assessment of students	3.70±0.94	4.35±0.76	-6.865	<0.05
14	Opportunity for doubt clearance of students	3.22±1.04	4.20±0.74	-8.553	<0.05
15	Control over students learning attitude and behaviour	3.67±1.06	4.40±0.67	-6.281	<0.05

[Table/Fig-5]: Comparison of online teaching vs classroom teaching (n=100).

involves them in active participation in learning compared to online teaching. Teachers feel significantly more satisfied with delivering complete content in classroom teaching compared to online teaching and teachers believe that online teaching has significant limitations in delivering knowledge to students as certain topics cannot be taught in online mode. Regarding feedback related to the learning experience, classroom teaching provide a significant opportunity both for teachers and students to improvise compared to online teaching. Teachers strongly agreed that classroom teaching gives teachers control over student learning attitudes and behaviour which is not there in online teaching.

DISCUSSION

Classroom teaching provides an opportunity for social and face-to-face interactions between students and teachers, and students themselves. To be a better student, learning their ability to ask questions, share opinions, to agree and disagree are the main requisites. Classroom teaching through conversation among students and between instructors and students provides a ground for developing this calibre among students. In contrast to this, online learning requires adjustments by teachers as well as students for a successful learning experience. Online courses often provide discussion boards, synchronous chat, electronic bulletin boards, and e-mails, but the effectiveness is still under debate. This study tried to capture school teachers' perspectives and experiences with online teaching during the COVID-19 pandemic. This study quantified the satisfaction level of teachers in online mode and it was found that only nine teachers were 100% satisfied with online teaching methods.

Learning environments do have an impact on student's learning [11]. Online teaching requires discipline at the student's level, so learning by online methods differs from student to student. Since online teaching is entirely dependent on internet connection, so any deficit in connectivity will hamper the entire learning experience [8,9]. It was also supported by another study that documented that online learning at home is not good as home does not provide a conducive environment for learning compared to classroom teaching [9].

When student's attentiveness and punctuality is concerned, teachers agreed that traditional classroom teaching is significantly better compared to online teaching. This is similar to the finding of other studies, that students in an online environment may feel isolated, [12] confused, and frustrated [13] and that reduces students interest in the subject and learning [14]. This is also supported by a study that documented that since there is no face-to-face interaction with students, teachers are not able to perceive the learning behaviour of students and teaching looks like talking to a wall [9]. Another similar study documented that students who failed to make online connections with other learners, felt more isolated and stressed [15].

In the present study, teachers expressed that students have a better understanding of the subject in classroom teaching compared to online teaching. Classroom teaching significantly motivates students and involves them in active participation in learning, compared to online teaching. In contrast to this, some scholars shared that interaction in an online environment promotes student-centric learning, encourages wider student participation, [16] and produces more in-depth and reasoned discussions, compared to traditional classroom settings [17,18]. In addition to this, one study documented that interaction in an online environment is easy and also has less time pressure on students compared to face-to-face interaction [19]. One more study described that during online discussions, shy and introverted students participate more compared to classroom teaching as they have less anxiety [20].

In the present study, teachers felt significantly more satisfied with delivering complete content in classroom teaching compared to online teaching, and teachers believe that online teaching has significant limitations in delivering knowledge to students as certain topics cannot be taught in online mode. This was supported by another study, which stated that online teaching has less opportunity

for control over learners and learners can ignore teachers by being online also and not participating in learning and there are dropout rates as high as 80% in online classes and suggested that course completion is 10 to 20% higher in classroom classes compared to online methods [20]. Regarding feedback related to the learning experience, school teachers shared that classroom teaching provides a significant opportunity both for teachers and students to improvise compared to online teaching. Teachers strongly agreed that classroom teaching gives teachers better control over student learning attitudes and behaviour, which is not there in online teaching. This is supported by a phrase from a book by McConnell D, which documented the presence of time delays in interactions/discussions between teachers and students during the online mode of teaching [16].

It is also supported by a study that documented that online teaching gives less feedback as perceived by the teacher regarding learners' performance [10]. In contrast to this, a study documented that online teaching provides more detailed and focused feedback on each individual's work although textual feedback is only possible and feedback is recorded permanently [16].

In addition, all online teaching provides more flexibility to learners and saves time and money spent on transportation. Regarding logistic arrangement, it is cheaper compared to traditional methods. However, those courses which were taught online are not counted for employment compared to traditional classroom courses. The same study also documented that topics and subjects require practical training cannot be taught online and study material which is available online is not trustworthy [21]. This is also supported by a study that describes that those topics in which there is laboratory demonstration cannot be taught online [9].

So, this study very well explored and documented that school teacher's perspectives and experiences favour more classroom teaching compared to online teaching, which is supported by various studies discussed above and also in addition this study very well documented and emphasised that classroom teaching will always be a part of learning worldwide as it provides more opportunity where students and teachers can interact, experiment, collaborate and create [22].

Limitation(s)

Firstly, the present study included school teachers for all the grades and as the methods of teaching, syllabus, and complexity of content are different for primary and secondary classes; similarly challenges faced by teachers for primary and senior classes in online teaching are different. Secondly, the majority of participants were private school teachers, so the study finding cannot be generalised to government schools.

CONCLUSION(S)

Classroom teaching has got more advantages like better student learning, student attentiveness, feedback, and assessment compared to online teaching. Online teaching can supplement classroom teaching only for a few topics. The curriculum needs to be thoroughly looked into and topics can be selected that can be taught in online mode. Apart from classroom assessment methods, online assessment modules for curriculum need to be prepared for better implementation of online teaching method as a complementary method for classroom teaching. Special training of educators on a rotation basis needs to be done to customize them with various tools and techniques of online teaching, and assessment methods.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Jun 11, 2022
- Manual Googling: Aug 22, 2022
- iThenticate Software: Aug 24, 2022 (5%)

ETYMOLOGY: Author Origin

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? NA
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **May 18, 2022**
Date of Peer Review: **Jul 11, 2022**
Date of Acceptance: **Aug 25, 2022**
Date of Publishing: **Oct 01, 2022**