



A STUDY ON THE NEW PARADIGM SHIFT TO ONLINE EDUCATION IN SCHOOLS DURING COVID-19: CHALLENGES OF EDUCATORS

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The Coronavirus (2019) explosion has put every economic region at risk. Educators are not an exception. The terrible result of lockdown in every area of the world, including India, has led to the protracted closure of schools and institutions, leaving education in shambles. The process of teaching and learning became online. The current research study identifies the multiple factors affecting online education and analyses the issues school educators face while teaching. A structured questionnaire was administered to 118 school teachers serving on boards and government schools across the Bengaluru North area, Karnataka. Results of the study indicate that teachers are using various appropriate methods in delivering online teaching. The study helps educational institutions and policymakers understand multiple problems with the teaching community in teaching virtually, thereby finding feasible options to make the inevitable online teaching system more effective.

KEYWORDS: Online Teaching, Teaching and Learning Process, Intelligence Quotient, Emotional Quotient, Adaptability, Activity-Building

INTRODUCTION

COVID-19 disease, a healthcare catastrophe, has been observed as the world's largest pandemic, spreading across the globe and affecting governments, populations, and individuals in various ways (Piret & Boivin, 2021). The pandemic impacted the global economy significantly. It has resulted in multiple issues

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in many sectors, mainly affecting the education sector. Schools all around the world came to a standstill in the year 2020. COVID-19 is entirely new, and there are no precedents or guides for schools and the government to continue with the teaching and learning process, which is the most crucial aspect of keeping the country's social and economic fabric intact (De Silva, 2021). Imparting education can never be stopped as it affects the lives of many youngsters. It will harm the growth and development of a nation. Above all, the pandemic has disrupted learning and teaching practices and processes at all levels of education streams worldwide, but such turmoil has significantly boosted online education. As a result, education has changed dramatically; with the phenomenal rise of e-learning, whereby teaching is undertaken remotely and on digital platforms, teachers and students have no other option but to adapt to online education (Mari et al., 2023). As the system is new to educators and learners, many issues must be faced and resolved. School educators encountered various challenges in keeping the momentum of teaching. Online education has many aspects like network connectivity, teaching material, pedagogy tools, virtual platforms, online tutoring apps, ward's emotional abilities, online assessment, evaluation, tracking students' absenteeism, conducting extra co-curricular activities, etc. Against this backdrop, the research paper endeavours to analyse various aspects of online education and issues concerning the effective delivery of knowledge to youngsters from the viewpoint of school teachers in the Bengaluru North area. Educational institutions can use teachers' perceptions in the survey conducted and governments, and policymakers can adopt requisite methods and techniques to improve online teaching and learning. Teachers and students who are important stakeholders will effectively engage in knowledge sharing and holistic development.

In the pandemic situation (COVID-19), many sectors were drastically affected; one is the educational sector. Education is an essential and continuous process that cannot suddenly stop, as learning must continue (Ramalakshmi et al., 2020). The solution to the health care issue was online teaching through virtual modes and live stream apps. Virtual education gave hope for the education sector to continue their work, but this method was very new to the traditional teaching process. It created trouble for educational institutions, students, and parents. It became a massive burden to teachers to use these new methods without training as it required technical skills, made beneficial for few and a hindrance for many; as a result, the stress level of teachers increased rapidly. Another major challenge was from online learning/tutoring platforms like Byju's, Vedantu, etc., which brought a sense of comparison in the young minds of students, making teachers strive even harder to make up their standards. Hence, the study focused on numerous factors influencing online education and identifying the challenges teachers face while engaging in online classes from kindergarten to high school. The study can be helpful in

educational institutions in understanding the problems faced by the teaching staff and assist in finding suitable solutions to overcome the obstacles.

With the abrupt transition to online learning, it is essential to comprehend the challenges and obstacles faced by educators in this region. By identifying these obstacles, policymakers and educational institutions can develop targeted strategies and provide educators with the support they need to effectively deliver online education. This study's findings will provide valuable insights into the unique challenges encountered by educators in Bengaluru North, allowing for the development of tailored solutions that can improve the overall online learning experience for students in the region.

REVIEW OF THE LITERATURE

Bråten and Stromso (2018) explain that integrating information technology into education will continue to speed up, and online education will finally become an integral part of classroom education. However, the authors express that the majority of students don't want to depend only on online learning as it doesn't help lay a foundation for their future endeavours and would affect their physical and mental health conditions. Students strongly believe that the environment in their homes hinders their ability to learn properly.

Kuh and Hu, 2019, reported that the learning techniques use numerous internet applications to provide classroom materials and allow learners and instructors to connect. Educators can devise a more engaged distance learning experience by adopting methods of sharing self-designed content videos, video conferencing, and live streaming apps available for Online Learning. Online learning is forecast as a future learning progression (Rajendra et al., 2020). This platform can result in a significant change in teaching-learning methodology in the present world. However, appropriate measures are to be taken to train all education stakeholders on the online learning platform.

Indiana University Bloomington (2015) analysed students' interaction and additivity to a new learning method. The authors state that only 51.8% of students prefer online learning, and more than half of the students pay attention to the online learning process. Most students and teachers experience network connectivity and bandwidth issues as significant challenges. 97.8% of teachers believe that traditional teaching methods can only convey quality knowledge. Half of the teachers think that online testing is not as easy as testing in a physical classroom. In addition, the study results showed that all students couldn't afford online classes, and conducting extra-curricular activities is difficult. Authors expressed every chance of students being deviated to unwarranted entertainment websites/applications.

Kim and Bonk (2020) discussed internet connectivity and accessibility. The

authors added that as most vaccine candidates are still awaiting clearance, most schools in the country use an online instruction style. The government of India started several initiatives to improve online education across the country, viz., DIKSHA (an online platform for school education), e-PATHSHALA (a mobile app and web portal developed by the National Council of Educational Research and Training), NROER (a repository of open educational resources), NISHTA (an online platform for higher education) (an integrated teacher training portal). Access to reliable internet connectivity has become a huge hurdle. The study revealed that in November 2019, internet penetration was at 54% in urban India and just 32% in rural India. Further, most users rely on mobile connectivity, which may not provide adequate bandwidth, significantly impacting the ability of students in rural India to engage with online classes. As per a UNICEF report, only 23% of households in India have internet for e-education.

Stern (2020) started experimenting with new methods of imparting knowledge among school-age children. It has resorted to creative imagination in teaching and learning systems and resulted in adaptability and fondness amongst the stakeholders; most educational- institutions altered their curriculum and working approach in imparting knowledge to the student community. Worldwide, more than 900 million students expect their institutions to help advance in the face of contemporary healthcare catastrophes. For many decades, teachers have engaged in face-to-face teaching, often known as conventional teaching; this instruction involves eye contact and direct interaction between professors and pupils. Now that the situation has forced professors to work from home, this could be the future of pedagogy.

Jena (2020) analysed the far-reaching effects of COVID-19 on primary and higher education in India. Due to the pandemic, pedagogical modifications and virtual instruction are now feasible at all school levels. To keep people engaged during lockdowns and prevent the spread of pandemics, authorities and educational institutions should give all students free internet access and digital study aids to encourage online learning.

Wadhwa (2020) examined how COVID-19 affects the Indian education system. The author addressed issues educators have when managing classrooms, such as difficulty monitoring and managing student behaviour, discontent with work, and background distractions when using online technologies. Online education is the way of the future, and all must be ready for it. By making future improvements to the online education system while keeping the health concerns of stakeholders, such as instructors and students, in mind, the most effective approaches to overcome most of its negative implications are likely to be adopted.

Young and Norgard (2020) discussed how the platform via which an e-learning course is provided determines students' access to learning and

involvement in course activities. Even if new e-learners have general solid information technology (IT) abilities, familiarisation with the online learning platform is crucial. A digital divide is created due to inadequate internet access and capacity. If educators and students do not have equal access to the internet, online education will fail to achieve its goals. We should not use virtual learning to replace face-to-face learning since it deprives students of human contact and interaction. Whatever tactics educators employ to make their online presentations engaging and effective, they can never be able to match the dynamic and interactive nature of face-to-face classroom instruction.

During the outbreak of COVID-19, [Fauzi and Khusuma \(2020\)](#) studied how primary school instructors felt about online education. The quantitative methodology of this study comprised a survey of Indonesian educators in Banten and West Java. Teachers face challenges, including a lack of facilities, internet access issues, needing data packets, assessment preparation and execution, and parental engagement. More than eighty per cent of teachers believe online teaching is a waste of time, despite its usefulness during the COVID-19 epidemic. Various stakeholders, including education officials, will be able to use this study as an online learning assessment tool. In addition, it laid the way for more research, particularly those focusing on early childhood development.

[Mukhtar et al. \(2020\)](#) performed a qualitative interview survey from March to April 2020. The event was attended by 12 academic members and 12 undergraduate students from the University College of Medicine and Dentistry in Lahore, Pakistan. To confirm the completeness of the interview guide, we organised four focus groups, two each with professors and students of medicine and dentistry. It has been demonstrated that remote learning provides advantages in terms of ease and accessibility, efficiency issues, and obstacles in preserving academic integrity. Internet technologies and lesson ideas that are gentler in their students' brains and more interactive should be taught to educators.

[Bahasoan et al. \(2020\)](#) studied students pursuing management and economics programmes at the University of West Sulawesi in Indonesia. The simple random sampling technique is used in the selection of samples. A structured questionnaire was administered to collect the primary data from 115 respondents. Simple statistical tools like percentages and mean were used for the analysis. The study's findings revealed many platforms like Zoom, Google Classroom, and Facebook. WhatsApp (54%) was primarily used to share material and content. 50% of respondents were satisfied with online classes. Reduced income of the parents due to pandemics and network connectivity were the main constraints. There were also issues like adjusting to

online lectures and purchasing data packs to attend online classes.

Shreedha and Tejal (2020) identified various challenges of online education, especially during the COVID-19 crisis. Issues discussed in the study include the problem of internet accessibility, content to be presented in the curriculum, limited resources (financial), lack of soft skills, addiction to gadgets, network connectivity, non-conducive environment, the scope for distraction, and value of the qualification to the outside business world. Muthuprasad et al. (2021) studied and analysed students' perceptions and preferences toward online education during the Covid-19 pandemic.

Saha et al. (2021) adopted a quantitative methodology. Between March and April of 2021, a Google Form survey was sent to 200 Delhi school teachers. SPSS was used to do a statistical analysis of the data collected. During COVID-19, instructors from various educational institutions were identified to support online education. Due to concerns with network access, a lack of ICT resources, problems with online quizzes and assessments, a lack of explanation clarity, data use, and more, many individuals were unable to study online.

Issues concerning effective teaching and learning through online mode have also been identified. As a newer topic, few studies have been conducted on the benefits and drawbacks of online teaching and learning from the perspective of students and teachers. In reviewing articles, it is observed that the main challenges and issues of the school educators teaching in different grades in the Bengaluru North area have not been assessed. Hence, with the help of a primary survey of school teachers, the present research study tries to identify the various aspects of online education and identifies various challenges teachers encounter in educating their wards online.

OBJECTIVES OF THE STUDY

The following are the objectives of the study:

1. To analyse the factors influencing online education and identify the challenges teachers face while engaging in online classes.
2. To find if significant differences exist between the grades given by teachers and the teaching and learning process, Emotional and Intelligence quotient, stress handling/adaptability of teachers and activity-building aspects.

RESEARCH METHODOLOGY

The present study has adopted exploratory, descriptive and analytical research designs for the conceptual study and to draw logical inferences. The population in the present study comprises teaching staff who are teaching in both

government and private schools affiliated with many different boards in the Bengaluru north area of the city. Teachers of both government and private schools teaching from kindergarten to X standard are selected as samples for the research study. The study adopted non-probability sampling methods, including convenience and snowball sampling techniques. Data is collected from 118 teachers from different schools in the city's north area of Bengaluru.

HYPOTHESES OF THE STUDY

Four Null hypotheses have been framed to examine the difference between independent and dependent variables.

1. H_0 = There is no significant difference between grades handled by teachers and the teaching and learning process
2. H_0 = There is no significant difference between grades handled by teachers and the Emotional Quotient and Intelligent quotient
3. H_0 = There is no significant difference between grades handled by teachers and stress handling/adaptability of teachers
4. H_0 = There is no significant difference between grades handled by teachers and activity-building aspects.

RESULTS OF THE STUDY

Demographic Profile of Respondents

Table 1

Demographic Profile of Respondents.

Characteristics		N	%
Grades/Classes engaged	Kindergarten	9	7.6
	Primary School	46	39.0
	Secondary School	39	33.1
	High School	24	20.3
Gender	Male	23	19.5
	Female	95	80.5
Age Group	21-30	37	31.4
	31-40	67	56.8
	41-50	14	11.9
	Teacher Training	3	2.5

Educational
Qualifications

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Table 1 continued

Diploma	1	0.8
Undergraduate	32	27.1
Undergraduate with Education	15	12.7
Post-graduate	51	43.2
Post-graduate with Education	16	13.6

N: Frequency; %: Percentage

Demographic characteristics of respondents are given in Table 1. 39% of respondent teachers are engaged in primary schools, 33.1% in secondary schools, 20.3% in high schools and 7.6% at the kindergarten level. 80.5% of the teachers were female and 19.5% were male with the age group of 31-40 years comprising 56.8%, followed by 21-30 years (31.4%) and 41-50 years (11.9%), respectively. Educational qualifications include postgraduates (43.2%), graduates (27.1%), PG with B.Ed. (13.6%), graduation with B.Ed. (12.7%), teacher trainees (2.5%) and diploma holders (0.8%).

Teaching and Learning Process

Table 2 illustrates the sources of information used, the convenient way of displaying the content, students attention factor in teaching, issues faced with content delivery and the effect of online tutoring apps.

Table 2

Components of Aspects and Challenges in Conducting Online Classes.

Characteristics	N	%	
Source of information	Books from library	10	8.5
	Online platforms like browsing, YouTube, etc.	26	22.0
	Old books/materials already have	28	23.7
	All of the above	54	45.8
A convenient way of displaying the content	PPT's	12	10.2
	Pre-recorded videos	10	8.5
	Any typed documents or PDF	10	8.5
	Or explaining with the help of images, charts etc.	29	24.6

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Table 2 continued

	All of the above	57	48.3
Student attention influencing factors	Content/topic	13	11.0
	Attractive images/videos so on	21	17.8
	Working out during classes	4	3.4
	Quoting examples	8	6.8
	Regular tests/assessments/ assignments	20	16.9
	Interaction and questioning	7	5.9
	All the above	45	38.1
	Issues of content delivery	Poor network	14
Live streaming apps		6	5.1
Pupil's age		7	5.9
Class timings		8	6.8
No direct contact		25	21.2
Insufficient materials for teaching		7	5.9
Online learning apps like Byju's, Vedantu etc.		6	5.1
Lack of interest of pupils		10	8.5
Completion of academic syllabus		1	0.8
All of the above		34	28.8
Issues with live-streaming Applications	Students started comparing your teachings with lecturing from these apps	11	9.3
	These online learning apps dragged the interest of students toward them	9	7.6
	Teachers were struggling hard to meet the expectations of the students created by these apps	5	4.2
	Students started ignoring your teachings due to these apps	12	10.2
	It didn't create any problems in your work	81	68.6

N: Frequency; %: Percentage

Regarding sources of information for teaching, the survey revealed that 23.7% of teachers prefer old books/materials and 22% of teachers prefer online platforms like browsing, YouTube etc., for teaching materials. 8.7% of teachers borrowed books from the library. 45.8% of teachers prefer all the options. For

displaying the content 24.8% of teachers prefer explaining with the help of images, charts etc. 10.2% prefer PPTs, 8.5% prefer pre-recorded video mode to deliver their lectures, word documents or PDFs and 48.3% of teachers used all of the above modes.

Regarding students' attention factor in teaching, 17.8% of teachers used attractive images, 16.9% used regular tests and assignments, 6.8% quoted examples and 5.9% interacted through questioning. In contrast, 38.1% opined that all the options were used. For issues faced with content delivery, 21.2% of teachers feel no direct contact between two parties created a problem in their teaching, and 11.9% of teachers identified poor networks as a reason. 5.1% of teachers said live-streaming apps like Google Teams, Zoom etc. 6.8% of teachers feel rigid class times created stress, 8% of teachers feel the completion of academic syllabus and 8.5% on lack of interest in pupils. 5.9% on insufficient materials, and pupils' age, whereas 5.1% of teachers feel online learning apps like Byju's, Vedanta etc. were also a reason for the challenge faced while online teaching. 28.8% of teachers opined all the above issues are affecting the teaching and learning process. Regarding the effect of online tutoring apps, 68.6% revealed the apps are not notable hindrances.

Emotional Quotient (EQ) and Intelligence Quotient (IQ)

EQ illustrates the stress-handling ability of students concerning their class/grade, involvement/ interest of students, students' interaction, intelligence/grasping ability, digital discomfort, no personal eye-to-eye contact, the response of students in online classes, and students' mental status (Table 3).

In respect of emotional and intelligence quotient aspects, teacher respondents survey showed that 27.1% strongly agree and 51.7% agree that the higher the class, the higher the ability of students, 16.1 % strongly agree and 44.1% agree on the interest and involvement of students, 17.8% strongly agree, and 43.2% agree on interaction, 15.3% strongly agree, and 39.0% agree on the wards intelligence, 16.9% strongly agree, and 46.6 % agree on digital discomfort. 16.1% strongly agree, and 44.1% agree that no personal eye-to-eye contact is the main issue affecting online classes. When they were asked about the mental ability of the students in online classes, 40.7% replied that students were quite interested, 28% said that they were not interested, and 17.8% wards were curious about this new method of learning.

Table 3**EQ & IQ Aspects and Issues .**

Characteristics		N	%
The higher the class, the higher the ability of the ward	Strongly agree	32	27.1
	Agree	61	51.7
	Neutral	18	15.3
	Disagree	7	5.9
Higher involvement higher is the ability of the ward	Strongly agree	20	16.9
	Agree	52	44.1
	Neutral	34	28.8
	Disagree	11	9.3
Student interaction increases adaptability	Strongly Disagree	1	0.8
	Strongly agree	21	17.8
	Agree	51	43.2
	Neutral	33	28.0
The intelligence of the ward increases online teaching effectiveness	Disagree	11	9.3
	Strongly Disagree	2	1.7
	Strongly agree	18	15.3
	Agree	46	39.0
Digital discomfort	Neutral	37	31.4
	Disagree	15	12.7
	Strongly Disagree	2	1.7
	Strongly agree	20	16.9
No personal eye contact	Agree	55	46.6
	Neutral	34	28.8
	Disagree	8	6.8
	Strongly Disagree	1	0.8
The mental ability of students to the new method	Strongly agree	19	16.1
	Agree	52	44.1
	Neutral	37	31.4
	Disagree	8	6.8
Students, responses to questions	Strongly Disagree	2	1.7
	Happy and curious	21	17.8
	Quite interested	48	40.7
	They were lost in their thoughts	33	28.0
Students, responses to questions	Not interested at all	16	13.6
	Few were answering	34	28.8
Students, responses to questions	No response	40	33.9

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Table 3 continued

They were unable to hear the question	28	23.7
Most of the time, the answers were wrong	16	13.6

N: Frequency; %: Percentage

Stress Handling And Adaptability Of Teachers

Data for Stress handling and adaptability of teachers is given in Table 4.

Table 4

Stress Handling and Adaptability Of Teachers.

Characteristics		N	%
Poor network	Strongly agree	43	36.4
	Agree	51	43.2
	Neutral	15	12.7
	Disagree	6	5.1
	Strongly Disagree	3	2.5
Weak/No response	Strongly Agree	27	22.9
	Agree	49	41.5
	Neutral	30	25.4
	Disagree	11	9.3
	Strongly Disagree	1	0.8
Lack of Technical knowledge	Strongly agree	19	16.1
	Agree	52	44.1
	Neutral	27	22.9
	Disagree	18	15.3
	Strongly Disagree	2	1.7
Difficulty in identifying slow learners	Strongly Agree	22	18.6
	Agree	36	30.5
	Neutral	39	33.1
	Disagree	18	15.3
	Strongly Disagree	3	2.5
Difficulty in satisfying advanced learners	Strongly Agree	13	11.0
	Agree	41	34.7
	Neutral	41	34.7
	Disagree	19	16.1
	Strongly Disagree	4	3.4

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Table 4 continued

Digital discomfort- affects class delivery	Strongly agree	16	13.6
	Agree	54	45.8
	Neutral	35	29.7
	Disagree	10	8.5
	Strongly Disagree	3	2.5
Higher classes are more comfortable	Strongly Agree	17	14.4
	Agree	45	38.1
	Neutral	32	27.1
	Disagree	21	17.8
	Strongly Disagree	3	2.5
Primary/ kindergarten is enjoyable	Strongly Agree	20	16.9
	Agree	44	37.3
	Neutral	29	24.6
	Disagree	17	14.4
	Strongly Disagree	8	6.8

N: Frequency; %: Percentage

Respondent teachers expressed that poor networks, lack of technical knowledge, difficulty in identifying slow learners, difficulty in satisfying advanced learners and digital discomfort are the main issues encountered. The majority of teachers responded that there is comfort in teaching higher classes, whereas 16.9% strongly agree and 37.3% agree that there is enjoyment in handling kindergarten children.

Activity Building Aspects

Activity-building aspects include conducting games and sports, extra-curricular activities, co-curricular activities and creating enthusiasm. Data is presented in Table 5.

Respondent teachers experienced that conducting games and sports was challenging. There was also difficulty in conducting extra-curricular activities as well as co-curricular activities in online and virtual classrooms.

Table 5**Activity Building Aspects.**

Characteristics		N	%
Games/sports more challenging	Strongly Agree	40	33.9
	Agree	52	44.1
	Neutral	21	17.8
	Disagree	5	4.2
Extra-curricular activities challenging	Strongly Agree	26	22.0
	Agree	61	51.7
	Neutral	22	18.6
Co-curricular activities challenging	Disagree	9	7.6
	Strongly Agree	32	27.1
	Agree	49	41.5
	Neutral	33	28.0
	Disagree	3	2.5
Difficulty in creating enthusiasm	Strongly Disagree	1	0.8
	Strongly agree	22	18.6
	Agree	60	50.8
	Neutral	30	25.4
	Disagree	3	2.5
	Strongly Disagree	3	2.5

N: Frequency; %: Percentage

Analysis Of Variance Results

ANOVA was used to find out the difference between grades given by teachers and components of aspects and challenges of conducting online classes

Teaching and Learning Process

As indicated in Table 6, there is no significant difference between grades handled by teachers and aspects and issues in the teaching-learning process. P values are >0.05 . This means that regardless of grades handled by teachers, all relied on available methods in content delivery to make online teaching more effective. All the teachers handling different grades are affected by poor networks, no direct contact, insufficient teaching material, and student attention in the teaching process. There is no significant difference between grades handled by teachers and the teaching and learning process. The null hypothesis is accepted, and the alternate hypothesis is rejected.

Table 6
Teaching and Learning Process (ANOVA).

		SS	df	MS	F	Sig.
What is the source of information you have mostly used during online classes?	Between Groups	1.386	3	0.462	0.446	0.720
	Within Groups	118.071	114	1.036		
	Total	119.458	117			
Which is the most convenient way of displaying/delivering content?	Between Groups	3.348	3	1.116	0.603	0.614
	Within Groups	210.965	114	1.851		
	Total	214.314	117			
Which of the following would you suggest as a student attention influencing factor?	Between Groups	12.545	3	4.182	0.814	0.489
	Within Groups	585.658	114	5.137		
	Total	598.203	117			
Which of the following issues do you face while content delivery?	Between Groups	16.255	3	5.418	0.538	0.657
	Within Groups	1148.058	114	10.071		
	Total	1164.314	117			
How did online learning apps/ tutoring platforms (like Byju's, Vedanta, etc.) affect your online classes?	Between Groups	4.937	3	1.646	0.890	0.449
	Within Groups	210.767	114	1.849		
	Total	215.703	117			

Emotional Quotient and Intelligence Quotient

As indicated in Table 7, there is no significant difference between grades handled by teachers and aspects and issues in EQ and IQ. P values are > 0.05 for all the variables except in respect of responses from students. For the remaining variables, it indicates that all the teachers, regardless of classes engaged, faced the same issues in understanding and assessing the emotional and intelligence

quotient of the wards. There is no significant difference between grades handled by teachers and Emotional quotient and Intelligence quotient. The null hypothesis is accepted, and the alternate hypothesis is rejected, except for students' responsiveness during class hours, in which the p-value is 0.027, which is < 0.05 . Hence, the null hypothesis was rejected for this variable.

Table 7**Emotional Quotient and Intelligence Quotient (ANOVA).**

Statements		SS	df	MS	F	Sig
The higher the class of the ward higher the ability	Between Groups	1.422	3	0.474	0.706	0.550
	Within Groups	76.578	114	0.672		
	Total	78.000	117			
The higher the involvement/interest of the ward, the higher the ability	Between Groups	1.161	3	0.387	0.474	0.701
	Within Groups	92.950	114	0.815		
	Total	94.110	117			
Teacher's interaction increases the adaptability	Between Groups	1.775	3	0.592	0.670	0.572
	Within Groups	100.666	114	0.883		
	Total	102.441	117			
Intelligence/grasping ability of the ward influences online class effectiveness	Between Groups	1.290	3	0.430	0.462	0.709
	Within Groups	106.075	114	0.930		
	Total	107.364	117			
Digital discomfort increases stress	Between Groups	2.695	3	0.898	1.233	0.301
	Within Groups	83.076	114	0.729		
	Total	85.771	117			
No personal eye-to-eye contact increases stress	Between Groups	2.308	3	0.769	0.973	0.408
	Within Groups	90.132	114	0.791		
	Total	92.441	117			

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Table 7 continued

How was the mental status of the students with this new method?	Between	1.343	3	0.448	0.509	0.677
	Groups					
	Within	100.250	114	0.879		
	Groups					
	Total	101.593	117			
Response of students to the questions asked in the online classes	Between	9.272	3	3.091	3.174	0.027
	Groups					
	Within	110.999	114	0.974		
	Groups					
	Total	120.271	117			

Stress Handling and Adaptability of Teachers

As indicated in Table 8, there is no significant difference between grades handled by teachers and aspects and issues of stress handling and adaptability of teachers. P-values are > 0.05, except in the case of two variables viz., poor network (p-value 0.014) and weak and no response from students (p-value 0.038). Therefore, it indicates there is no significant difference between grades handled by teachers and the stress handling and adaptability of teachers. The null hypothesis is accepted, and the alternate hypothesis is rejected for all the variables except in the case of two variables i.e., poor network and weak response affect the stress and adaptability issues.

Table 8

Stress Handling and Adaptability of Teachers (ANOVA).

		SS	df	MS	F	Sig
A poor network increases stress	Between	9.667	3	3.222	3.714	0.014
	Groups					
	Within Groups	98.918	114	0.868		
	Groups					
	Total	108.585	117			
Weak/ no response from students increases stress	Between	7.309	3	2.436	2.892	0.038
	Groups					
	Within Groups	96.047	114	0.843		
	Groups					
	Total	103.356	117			
Lack of technical knowledge increases stress	Between	4.056	3	1.352	1.392	0.249
	Groups					
	Within Groups	110.757	114	0.972		
	Groups					
	Total	114.814	117			

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Table 8 continued

Difficulty in identifying slow learners	Between Groups	2.312	3	0.771	0.702	0.553
	Within Groups	125.112	114	1.097		
	Total	127.424	117			
Difficulty in satisfying advanced learners	Between Groups	2.085	3	0.695	0.705	0.551
	Within Groups	112.356	114	0.986		
	Total	114.441	117			
Digital discomfort affects class delivery	Between Groups	5.052	3	1.684	2.055	0.110
	Within Groups	93.422	114	0.819		
	Total	98.475	117			
Higher classes teaching is more comfortable/adaptable for online teaching	Between Groups	4.026	3	1.342	1.285	0.283
	Within Groups	119.058	114	1.044		
	Total	123.085	117			
Teaching primary school wards can be more enjoyable and effective	Between Groups	2.745	3	0.915	0.704	0.552
	Within Groups	148.212	114	1.300		
	Total	150.958	117			

Activity Building Aspects

As indicated in Table 9, there is no significant difference between grades handled by teachers and aspects and challenges in activity building. P values are >0.05 . This means that irrespective of grades handled by teachers, all encountered challenges in conducting sports, extra and co-curricular activities and creating enthusiasm amongst wards. There is no significant relationship between grades handled by teachers and activity-building aspects. The null hypothesis is accepted, and the alternate hypothesis is rejected.

Table 9

Activity Building Aspects (ANOVA).

Statements		SS	df	MS	F	Sig
Conducting Games/sports activity was the most challenging	Between Groups	2.737	3	0.912	1.341	0.265
	Within Groups	77.577	114	0.680		
	Total					

Continued on next page

Table 9 continued

	Total	80.314	117			
Was there any problem conducting extra-curricular activities	Between	2.116	3	0.705	1.002	0.395
	Groups					
	Within	80.223	114	0.704		
	Groups					
Conducting co-curricular activities through online platforms was not that easy	Total	82.339	117			
	Between	1.712	3	0.571	0.780	0.508
	Groups					
	Within	83.440	114	0.732		
Creating enthusiasm in competitions was difficult during this period	Groups					
	Total	85.153	117			
	Between	1.323	3	0.441	0.590	0.623
	Groups					
	Within	85.194	114	0.747		
	Groups					
	Total	86.517	117			

FINDINGS OF THE STUDY

The majority of respondents are primary school teachers (39%), followed by secondary (33.1%) and high school (20%). The majority are female members (80.5%), and in the age group majority are between 31-40 (56.8%), followed by 21-30 (31.4%) and 41-50 (11.9%), respectively. In respect of educational qualifications, there are post-graduates (43.2%), and graduates (27.1%)/ There are also teachers with PG with B. Ed (13.6%), graduation with B. Ed (12.7%), teachers training (2.5%) and diploma (0.8%). In respect of sources of information. 45.8% of teachers preferred all the available options, such as books/materials, online platforms like browsing, YouTube, etc., and books from the library. 23.7% used books/materials already available with them. For inconvenient influencing in displaying the content, 24.8% of teachers prefer explaining with the help of images, charts etc., and 10.2% prefer PPTs. In contrast, most teachers (48.3%) used all modes of images, charts, PPTS, PDFs/typed documents, and recorded videos. Attractive images and videos are mainly used as students' attention-seeking factors (17.8%). Whereas the majority opinion (38.1%) reveals that all the aspects, i.e., images and videos, regular tests and assignments, content/topic of teaching, quoting examples, interaction and questioning, and working out during classes are influencing factors. Regarding issues faced with content delivery, 28.8% of teachers experienced many issues in the teaching and learning process, including no direct contact with students and poor networks. Rigid class times, problems in the completion of academic syllabus, lack of interest in pupils, insufficient materials, pupil's age, online

learning apps like Byju's, Vedanta etc. are causes of stress to teachers. 78.8% of teachers believed that the higher the class, the higher the ward's ability. 61% felt that the higher the student involvement and interaction, the higher the ability to understand and learn. 54.2% of teachers expressed that students' intelligence and 58.5% expressed the mental ability of wards as major factors in effective online teaching. 79.7% of teachers experienced poor network connectivity which affected the emotional quotient of both teachers and pupils.

No response from students was also found to be a disturbing factor (64.4%). Lack of technical knowledge (60.2%) was also a major identifiable issue. There was difficulty in identifying slow learners (49.2%) and satisfying advanced learners (45.8%), and digital discomfort also affected their health and mental condition. 52.5% of teachers felt teaching higher classes was more comfortable, and 54.2% felt teaching lower classes was more enjoyable. 78% of teachers opined that conducting sports and games is very challenging. 73.7% and 68.6% of teachers revealed that conducting extra-curricular and co-curricular activities was also challenging. Creating enthusiasm amongst the students was also a major challenge that teachers faced (69.5%). Regardless of the grades/classes engaged, all the teachers adopted all methods to make the teaching-learning process effective. All encountered similar challenges in online teaching delivery as the p values were > 0.05 for all the variables.

Regardless of the grades/classes engaged, all the teachers experienced the same challenges regarding IQ and EQ aspects, stress building and adaptability aspects and activity building aspects.

SUGGESTIONS

- Basic training for teachers on online platforms is essential for smooth knowledge transfer.
- A standardised system for live streaming apps in their schools like Zoom/Google Meet/ Teams App to be adopted by educational institutions.
- Regarding internet access, school authorities must arrange infrastructural facilities for their teaching staff to support in conducting online classes effectively and can help students through fee concession. They can also collaborate with NGOs for support regarding the same. They can initiate with NGOs to distribute smartphone handsets and tablets, as some students can't afford these amenities.
- To ensure uniformity in teaching and learning and improve content delivery, the school administration and concerned authorities can work on maintaining a book bank in the school. As a result, both students and teachers will be benefited.

- Sharing of materials through Google Classroom is cost-effective and comprehensive. So, teachers can share the information through Google Classroom. Training sessions need to be conducted for teachers and students to learn to use the platform.

- Teaching material will be attractive and can seek students' attention if they are designed with images, videos, PPTs etc.

- Kindergarten and primary students' teaching materials can be prepared in the form of songs, convey the lessons in story form etc., to create interest in learning.

- Educational institutions need to adopt new approaches to academic assessment. Students' academic performance can be evaluated in many ways, such as through fun quizzes, Sudoku games, role-plays and short projects.

- Frequently asked questions and interacting with students will help to alert them during class hours.

- Many online learning platforms provide multiple courses on the same subject with varying levels of certification, methodology, and assessment criteria. As a result, the quality of courses may vary across online learning platforms. Hence it is necessary to build quality assurance systems and quality benchmarks for online learning by educational institutions. Advanced learners can be kept engaged by giving home assignments on case study analysis and real-time experiments concerned with their academics.

- Teachers can increase students' enthusiasm by conducting indoor learning activities like pick and speak, debate, collage, drawing competitions etc.

- Innovative methods like recorded videos of dances, fusion dances, live singing concerts, digital collages, digital face painting, hair styling, nail art etc., can be conducted to encourage students' passion.

CONCLUSIONS

Because of the coronavirus, most countries have implemented lockdown and social distancing measures, closing schools, training institutes, and education facilities. Consequently, Educators started delivering education through multiple online channels, which is a paradigm change. Despite the challenges that educators and learners face, online learning has become a remedy for this unprecedented global pandemic. It necessitated adapting to new academic approaches to virtual education. However, implementing appropriate and relevant pedagogy for online education mainly depends on instructors' and learners' competence and experience in information and communications and the support of school authorities and the government. The present study

adopted a quantitative research approach through the primary survey to examine challenges faced by the teaching community in online class deliverance. A limited sample size of one hundred and eighteen teachers serving across different private schools and government schools in the Bengaluru north area of the city were included in the study. The study's analysis and inferences depended on the admittance of information by the respondents. Further studies could overcome the constraints of the study by including qualitative techniques like interview schedules, and the primary survey can be extended to other parts of Bengaluru city.

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