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A study on shift of traditional classroom methods to online teaching methods in higher education scenario during lockdown

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Abstract
Traditional education has been around for thousands of years. Traditional education emphasizes direct instruction to the students and students learn through listening and observation. The education which is taught in the schools today is the modern education. Modern education includes listening, writing, visualizing, imagining, and thinking skills. This is done in a very formal way. The methodology used for teaching is very interactive. Modern education is just an evolution of the traditional education which was imparted to the students a few years back. We do not recommend closing schools and colleges and only offering online courses. Use of technology in education is resulting in different concepts in the system, for instance the move from teacher-centric education to student-centric education. Instead of replacing formal education with online education, they can be combined to create a more effective, efficient, and interactive learning experience. Pedagogy in digital education is an important link between course content, educationists, technology and course-takers. In this paper we discussed the perception and problems faced by the teachers and discussed the adaptation of new thing for using online teaching.

Keywords: online teaching, technology, pedagogy, lockdown

Introduction
The pandemic situation moved the world with rapid changes. Right now the economy is adversely affected due to the lockdown. Education sector is also similarly clashing the effects of the lockdown. The lockdown has accelerated adoption of digital technology. The use of technology in education results in introduction of different concepts in the system, for example, the transition from teacher-centred education to student-centred education. We are talking about virtual classrooms and various online tools. Today it shows the commitment between the teacher and the students as close as possible to the real classroom experience. In the future, these tools can also make teacher, parent, and staff / management meeting more economical while providing the necessary interactivity.

Closing schools and colleges is a challenge faced by India. But Central Government as well as state governments have regularly published information on various initiatives undertaken by ministries such as the MHRD, the Department of Technical Education, National Council of Educational Research and Training (NCERT) and others to support and benefit to young people and students. Some of the initiatives are SWAYAM-Study Webs of Active-Learning for Young Aspiring Minds online courses for teachers, MOOC, UG / PG for non-technology courses, e-PG Pathshala or electronic content containing modules on social sciences, arts, fine arts, natural sciences and mathematics, YouTube channel CEC- UGC, Vidwan - a database of experts who provide information to their peers and potential collaborators, NEAT - an AICTE initiative based on the PPP model to improve student employability skills, in collaboration with educational technology companies and the National Digital Library (NDL), a repository of learning resources with a single window. Many notable initiatives have been taken, such as the talking tutorial, free and open source software for education (FOSSEE), e-Yantra, Google Classroom, etc.

Statement of the problem
The schools and colleges were closed compulsorily due to social lockdown which make education sector to a cessation. Students had to make much bigger adjustments because learning has always been in classrooms where they can't go now. Furthermore, many of them may not be well equipped with technological tools. Going forward, the use of technology in teaching or recruiting in a new era in which the best teachers will be available worldwide to students. The quality of education will be evaluated not only by the quality of the teaching staff, but also by having the quality IT infrastructure and the familiarization of the teaching staff with the digital teaching technologies as important parameters. Here, the digital vision of the Indian government is becoming an essential instrument to solve the current Covid-19 crisis.

Review of literature
According to Bailey (2009) [9], These online instructors also identified the need to engage their students, which can be accomplished by utilizing emails and online discussion boards, responding promptly to discussion questions, encouraging students to share their backgrounds. To achieve these objectives, they suggested online instructors be good organizers. In a well-organized course they described, students should be given all course materials at the

beginning of the class, be provided with direct links to the necessary websites and resources, and be clearly informed about how to navigate the university website to successfully complete the course. In addition, they noted that being flexible was another crucial element for effective online teaching. Technology isn't always perfect and reliable, and online instructors have to be prepared to cope with issues such as system delays, software updates, email glitches, etc. Good online instructors are those who possess the knowledge and skills on how to use and adapt updated technologies, who are available online at all times, who frequently check for emails and text massages, who promptly reply to questions and concerns, and who grade and return assignments with feedback on a timely manner.

Crawford-Ferre (2012) [10] suggested that online faculty have professional development and sufficient professional training related to the online design and instructions. Professional development should emphasize how to promote effective online collaboration for students, how to set high expectations, how to adjust instructors' teaching to conform to the online environment, and how to create proper online teaching strategies, etc.

Anna Sun (2016) [8], the purpose of this paper is to provide practical suggestions for those who are planning to develop online courses so that they can make informed decisions in the implementation process. The purpose of this paper is to provide practical suggestions for those who are planning to develop online courses so that they can make informed decisions in the implementation process. Based on the findings, the authors argued that effective online instruction is dependent upon 1) well-designed course content, motivated interaction between the instructor and learners, well-prepared and fully-supported instructors; 2) creation of a sense of online learning community; and 3) rapid advancement of technology. Under current debates on the cost and quality of higher education, this study could help for the improvement of higher education.

Nandan Nilekani "The rapid shift to everything online, zoom classes, teaching through smart phones, all of this is part of a short-term response, which was necessary but not sufficient. We need to fundamentally reimagine schools, build a resilient system strategically detailing how we are going to deal with the turbulence for the next few years" Revisiting the basics, decoupling schooling from schools, ensuring trust of students and parents with alternative teaching methods, and ensuring all learners have access to be learning were among the focus areas of schools. "How do we ensure that there is no physical interaction but still trust is maintained between teachers and students or parents?

Objective of the study

- To study on perception about online teaching and offline teaching by teachers.
- To analyse the problems faced in online teaching by teachers.
- To analyse the new modes used by teachers in teaching classes through online.
- To find out the overall opinion about online teaching by teachers.

Hypothesis of the study

1. **H_0:** There is no significant difference between the perception about online teaching and usage of application during the lockdown period
2. **H_0:** There is no significant relationship between usage online tools before lockdown and online class taken during lockdown
3. **H_0:** There is no association between the opinion about the online teaching and their awareness about the technology.
4. **H_0:** There is no significant difference between age and problems faced by the respondents for taking online classes.

Research Methodology

The present study adopts an analytical and descriptive research design. By adopting convenience sampling method, respondents were Assistant Professors and Associate Professor of different colleges. Data was collected by using two main methods. i.e., primary data and secondary data. The tools used for analysis is ANOVA, t test and Chi-square test

Limitation of the study

1. The information given by the respondents might be biased because some of them might not be interested in providing correct information.
2. Respondents tried to escape some statements. This was one of the most important limitations faced, as it was difficult to analyse and come at a right conclusion.
3. Due to time and cost factor, only limited respondents were surveyed.

Most used Application in online teaching

Zoom

Zoom is a powerful cloud video conferencing platform that allows you to host "meetings" with hundreds of participants. Using Zoom, educators can share lesson plans, give instruction, swap files with students, and communicate directly with the group or individuals via chat, all within the app.

Google Classroom

Google Classroom, educators can create classes, distribute assignments, grade and send feedback, and see everything in one place.

Cisco Webex

Cisco Webex is an American company that develops and sells web conferencing and video conferencing applications.

Google Meet

Google Meet is a video-communication service developed by Google.

Microsoft Teams

Microsoft Teams is a unified communication and collaboration platform that combines persistent workplace chat, video meetings, file storage (including collaboration on files), and application integration.

Moodle

Moodle is used for blended learning, distance education, flipped classroom and other e-learning projects in schools, universities, workplaces and other sectors.

Analysis and Discussion

Table 1: Demographic profile of the respondents

Demographic Factors	Options	Frequency	Percentage
Age	25 – 35	45	50.0
	35 – 45	34	37.8
	45 – 55	8	8.9
	Above 55	3	3.3
Gender	Male	38	42.2
	Female	52	57.8
Educational Qualification	M.Phil	26	28.9
	Master degree with NET/SET	37	41.1
	Ph.D	27	30.0
Designation	Assistant Professor	72	80.0
	Associate Professor	8	8.9
	Lecturer	10	11.1
Monthly Income	Upto Rs 20,000	53	58.9
	Rs 20,000 – Rs 50,000	27	30.0
	Rs 50,000 – Rs 80,000	3	3.3
	Above Rs 80,000	7	7.8

***Source*:** primary data

Table 1 discloses that out of 90 respondents, the majority (50 percent) of the respondents belong to the age group of 25-35 years, 37.8 percentage respondents belong to the age group of 34-45 years. 8.9 percentage respondents belong to the age group 45-55 years. 3.3 percentage respondents are above 55 years. Majority (57.8 percent) of the respondent's female, 42.2 percentage respondents are male. Majority (41.1percent) of the respondents completed master degree with NET/SET. 30 percentage respondents are qualified Ph.D. 28.9 percentage respondents are qualified M.Phil degree. Majority (80 Percent) of the respondents are assistant professor 8.9 percentage respondents are associate respondents, 11.1 percentage respondents are lecturers. Majority of (58.9 Percent) of the respondents earn income Up to Rs. 20,000. Among these 30 percentage of the respondent's income up to Rs.20,000-50,000. 3.3 percentage respondent's income up to Rs.50,000-80,000. 7.8 percentage respondents are earned income above 80,000.

Table 2: Teaching Experience of the respondents

No. Of. Years	Frequency	Percent
Up to 5 years	32	35.6
6 - 10 years	26	28.9
11 - 13 years	12	13.3
Above 13 years	20	22.2
Total	90	100.0

***Source*:** Primary Data

Out of 90 respondents; 35.6 percentage respondents teaching experience up to 5 years. 28.9 percentage respondents teaching experience are 6 – 10 years. 22.2 percentage respondents are experienced above 13 years. 13.3 percentage respondents experience are 11-13 years.

Table 3: Mostly used Application for teaching

Application	Frequency
Google Classroom	50
Google Meet	49
Cisco webex	22
Moodle	9
Zoom	68
You tube	33
WhatsApp	47
Microsoft team	12
Telegram	4
Go to meeting	2

***Source*:** Primary data

Most of the respondents used zoom application for teaching activities. Next, they used the Google classroom for their educational activities and then used Google Meet application. And other respondents prefer least to the other application mode to convey the educational content in the pandemic situation.

Table 4: ANOVA for perception about online teaching and usage of application used during lockdown

Opinion		Sum of Squares	df	Mean Square	F	Sig.
Online Teaching is better	Between Groups	.100	1	.100	.076	.784
	Within Groups	115.856	88	1.317		
Online Teaching take more time-consuming	Between Groups	2.967	1	2.967	2.628	.109
	Within Groups	99.356	88	1.129		
Spent more time for preparation in online teaching	Between Groups	.280	1	.280	.247	.620

	Within Groups	99.509	88	1.131		
Quality of online teaching method	Between Groups	1.107	1	1.107	.833	.364
	Within Groups	116.849	88	1.328		
Easy to handle the computer	Between Groups	.920	1	.920	.777	.380
	Within Groups	104.235	88	1.184		
Online teaching is future education system	Between Groups	.133	1	.133	.125	.724
	Within Groups	93.822	88	1.066		

***Source*:** Primary data

The table shown the significant difference between the perception about online teaching and usage of application used during the lockdown period. As per acceptance of null hypothesis (p> 0.05), online teaching better than the traditional teaching method, more time consuming compare to the classroom teaching, spending more time to prepare online teaching, quality of online teaching method, easy to handle the computer in teaching process, online teaching is future of education system are not significant associate with the respect of perception and usage of application in before and during the lockdown period.

Table 5: t test for usage online tools before and class taken during lockdown Null Hypothesis (Ho) - There is no significant relationship between usage online tools before lockdown and online class taken during lockdown

	Paired Differences					T	df	Sig. (2-tailed)
	Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Usage of online tools before and during lockdown	.056	.527	.056	-.055	.166	1.00	89	.320

***Source*:** Primary data

In this table significance value of usage online tools for teaching before and during the lock down period is greater than 0.05. We conclude that there is a significant relationship between the before and during the usage of online tools in the lockdown period.

Table 6: Cross Tabulation of awareness in technology and overall opinion about the On-line teaching

Awareness about technology		opinion about the On-line teaching				Total
		Not useful	Neutral	Useful	Necessary	
Average	Count	0	5	4	3	12
	awareness in Technology	0.0%	41.7%	33.3%	25.0%	100.0%
	overall opinion about On-line teaching	0.0%	29.4%	10.5%	10.0%	13.3%
	Total	0.0%	5.6%	4.4%	3.3%	13.3%
Good	Count	2	10	23	13	48
	awareness in Technology	4.2%	20.8%	47.9%	27.1%	100.0%
	overall opinion about the On-line teaching	40.0%	58.8%	60.5%	43.3%	53.3%
	Total	2.2%	11.1%	25.6%	14.4%	53.3%
Very Good	Count	3	2	11	14	30
	awareness in Technology	10.0%	6.7%	36.7%	46.7%	100.0%
	overall opinion about the On-line teaching	60.0%	11.8%	28.9%	46.7%	33.3%
	Total	3.3%	2.2%	12.2%	15.6%	33.3%
Total	Count	5	17	38	30	90
	awareness in Technology	5.6%	18.9%	42.2%	33.3%	100.0%
	overall opinion about the On-line teaching	100.0%	100.0%	100.0%	100.0%	100.0%
	Total	5.6%	18.9%	42.2%	33.3%	100.0%

***Source*:** Primary data

The above table shows the relationship between awareness in technology and overall opinion about the On-line teaching. Out of 90 respondents, 42.2 percent of the respondents have opinion that online class taken during lockdown is useful. In that 47.9 percent of the respondents have good awareness in technology, 36.7 percent of the respondents have very good awareness in technology and 33.3 percent of the respondents have average level of awareness in technology.

Table 7: Chi-square test for awareness in technology and overall opinion about the On-line teaching Null Hypothesis (H_0) – There is no association between the opinion about the online teaching and their awareness about the technology.

Chi-Square Tests	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.890[a]	6	.092

***Source*:** Primary data

From the above table it is found that the calculated p value (.092) is higher than the significance level at 0.05. Hence, it is stated that there is no significant relationship exist between the awareness in technology side and opinion about the online teaching.

Table 8: ANOVA for age of the respondents and Problem faced while teaching

Problems Faced		Sum of Squares	df	Mean Square	F	Sig.
Technological Issues	Between Groups	.584	3	.195	.256	.857
	Within Groups	65.516	86	.762		
Lack of Computer Knowledge	Between Groups	2.801	3	.934	.639	.592
	Within Groups	125.688	86	1.461		
Network Problem	Between Groups	4.410	3	1.470	2.178	.096
	Within Groups	58.046	86	.675		
Time Management	Between Groups	.529	3	.176	.199	.897
	Within Groups	76.371	86	.888		
Mental Stress	Between Groups	3.838	3	1.279	.986	.403
	Within Groups	111.551	86	1.297		
Physical Illness	Between Groups	1.977	3	.659	.543	.654
	Within Groups	104.346	86	1.213		
Less Response from the students	Between Groups	5.416	3	1.805	2.152	.100
	Within Groups	72.140	86	.839		
Personal Issues	Between Groups	4.114	3	1.371	1.136	.339
	Within Groups	103.842	86	1.207		

***Source*:** Primary data

The table shown the significant difference between age and problems faced by the respondents for taking online classes. As per acceptance of null hypothesis (p> 0.05), Technological issues, lack of computer knowledge, network problem, time management, mental stress, physical illness, less response from the students, personal issues are not significant associate age and problems faced by the respondents while taking the online classes.

Conclusion

Universities and schools across the country have been closed since 16th March 2020, when the Centre announced a country wide classroom shutdown as part of a slew of measures to contain the Covid-19 outbreak. In such situation there is a need to be able to virtualise space so that schooling can be done from anywhere. The traditional system reflexes to a disaster were now paralysed and the domino effect of the pandemic would be felt for years. "Unlike other disasters which have a certain time frame, we do not know that how long will this go on". We need to develop the ability to deal with different children with different speeds, mentoring them while maintaining the quality of learning and teaching and how to ensure there is inclusivity. Schooling beyond school, learning beyond classroom and playing beyond playground should be our motive when we look forward to synchronizing teaching learning experience. An online survey was conducted during this period from college teachers. The study reveals that online teaching is better than the traditional method but it should be a time-consuming affair on the part of the teachers and there is a significant difference exist between the traditional and online teaching methods. But the awareness levels of using technology enabled teaching methods are more substantial for teachers. But their age is not criteria for facing the problem while taking online classes.

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