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E-Learning in Higher Education amidst Covid-19 Pandemic: Challenges and Opportunities Faced by the Students of the University of Delhi

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Abstract
The year 2020 witnessed the outbreak of Covid-19, a disease caused by SARS-COV-2 virus. After the World Health Organisation (WHO) declared it a Pandemic, several counties decided to shut down all activities as a consequence of a health emergency. The virus had severely impacted more than 157 crore students across 191 countries around the world. The pandemic shook the normalcy in every sphere of life and forced the closure of educational institutions, including schools, colleges, and Universities across the world. The crisis left the educational institutions with no other option but to resort to distance learning. Hence, 'E-learning' emerged as the new normal for the teaching fraternity. With rampant use of Information and Communication Technologies (ICTs), a new reality of virtual teaching and learning has dawned with an escalated penetration of online activities. Webinar and Faculty Development Programmes were organised by various colleges to acquaint the teachers with various digital platforms that could be used as an alternative to the physical, face-to-face teaching-learning among the students of the University of Delhi. Education combined with technology offers numerous opportunities in terms of efficiency but at the same time poses challenges ranging from technical, social, logistical issues to attitudinal changes. A self-structured questionnaire-based study has been conducted. Data has been collected from the students enrolled in the various programmes of the University of Delhi. The aim of the study is to analyse the effectiveness of virtual teaching and assessment methods, and also its impact on the physical and financial health of the students. Statistical tools such as Descriptive statistics, Reliability Analysis, Kolmogorov-Smirnov test, one sample t-test and non-parametric hypothesis testing have been applied to achieve the results of the study. The findings suggest that Covid-19 has opened up the educational environment, and acceptability to E-learning in the Indian Context. E-learning has also emerged as a window of opportunity for EdTech start-ups, and such tools can provide a feasible solution, however, they cannot completely substitute the conventional face-to-face interaction-based learning, keeping in mind the various technological, social and economic and health factors that act as a barrier in effective teaching- learning process.

Keywords: Covid-19, E-learning, Higher Education, Pandemic, ICT Tools, EdTech

Introduction

COVID-19 had been a catalyst for change. This caused a public healthcare crisis, livelihood crisis, as well as a wealth crisis across the world . Universities and all other educational institutions throughout the country had to be closed from March 16, 2020 when the Indian Government announced a country-wide lockdown as one of the several measures to contain the outbreak of the pandemic.

The Government of India through its various Ministries, viz., Ministry of Health, Ministry of Home Affairs, Ministry of Education and Ministry of Ayush had taken initiatives to contain the virus' spread and issued directives and advisories to educate the people about the seriousness of the infection from Coronavirus and the measures to protect from it. Precise instructions were issued to the pan Indian universities and colleges by the Ministry of Education and the University Grants Commission in this regard.

Firms both in public and private sectors, educational institutions and even the healthcare sector had to heavily rely on technology automation and digitisation to meet the goals. The pandemic had posed enormous implications for economies and the future of mankind, and a strong determination to overcome it was required. The spread of the coronavirus also known as COVID-19 started in December 2019. The origin was traced in Wuhan, China. The virus was easily transmitted from person to person and the World Health Organisation declared it a pandemic in early 2020. The pandemic severely impacted the world economy and not just industries- big, small and medium-sized suffered heavily, but the education sector also had to bear its brunt.

A complete lockdown was announced in various parts of the world as an after effect of the pandemic. People were asked to maintain social distancing to curb the spread of this viral disease. Offices, malls, temples, airports, railway stations, schools, colleges and Universities that saw a large number of human gatherings were closed down completely. Businesses, educational institutions, recreational clubs etc world over were completely shut down. Work from home became a new normal. In India, a complete lockdown was announced by our honourable Prime Minister from March 24, 2020 initially for a period of three weeks. This move made all the schools, colleges and Universities to suffer a jolt and adjust to the new normal "teach from home".

In order to contain the pandemic, but at the same time ensure continuity in teaching- learning process, the University's Grant Commission and Ministry of Education had issued several advisories and guidelines to the universities and colleges, to impart online teaching by making the best use of e-resources. Webinars and Faculty Development Programmes were organised by various colleges to acquaint the teachers with various digital platforms that could be used as an alternative to the physical, face-to-face teaching-learning among the students of the University of Delhi. Ministry of Education through all its communications, emphasized to continue with teaching-learning processes using online modes such as Cisco Webex Meeting, Google Classroom, OERs, YouTube streaming, SWAYAM platform, Swayam Prabha, e-yantra, Virtual Labs, application of spoken tutorials, National Digital Library (NDL), electronic journals.

'E learning' was adopted by all the educational institutions to ensure that the students did not suffer. The stakeholders of the educational system switched from the traditional ways of learning to the modern technological mode. Faculty and students started learning to use various digital platforms Google meet, Zoom, WebEx, Google classroom etc. 'Remote learning' became the new normal. Indian education system prior to the pandemic followed a brick-and-mortar system where face to face teaching learning took place. blended learning though did exist some places, but mostly the educational institutions followed the traditional method in imparting knowledge.

The spread of virus changed the teaching methodology altogether. The educational institutions though suffered a jolt initially but came to terms with this situation immediately. The use of internet and internet-based activities became rampant. There was also a steep rise in the use of internet services during the lockdown period.

E-learning enjoys several advantages but also suffers from certain limitations. Genuine concern in respect of affordability, accessibility, connectivity especially in rural and remote areas have been raised by the stakeholders.

Review of Literature

Virtual Learning allows students to learn as per their convenience as physical presence is not required. When the world experienced lock down under which businesses, educational institutions, recreation clubs etc were closed down, teachers and

students followed virtual learning. This involved the use of the internet and many digital platforms to facilitate the process (Fry). In today's world, the students should be prepared to face any health challenges through increased awareness. (Lee et al.) emphasised that environmental hygiene should be made a top priority in schools. This would help in the prevention of infectious diseases being transmitted.

(Fox) pointed out that in 2003, China witnessed the spread of SARS. This led to the closure of 302 schools and nearly 10 lakh students to stay at home and teachers faced many technological problems in educating their students from home. It was further stated that teachers used various methods to teach their students such as uploading lectures online.

However, a large number of teachers were found not equipped to take online classes and faced many challenges.

Online teaching (Barr and Miller) can become effective and successful only if the stakeholders are supportive of the various innovative tools and devices available to teachers.

It was observed by (Hinderaker) that there was a continuous rise in the mental health disorders among college students and the matter needed immediate attention. The use of ICT tools has gained momentum and educational institutions must prepare themselves for meeting the challenges posed by them (Bond et al.). The transmission of knowledge through digital means has been in use for quite some time and more and more people are getting involved with it (Kopp et al., Leszczynski et al.).

In case of higher educational institutions, digital transformation included digital processes to facilitate the transformation (Kopp et al.)

The spread of coronavirus known as covid-19 began in December 2019, its origin was traced in Wuhan China (Huang et al.). The virus was easily transmitted from person to person and spread quickly (Paules et al.; Cheng et al.).

The virus disease can be dangerous and fatal as it is linked to severe acute respiratory syndrome (SARS-COV) (Meng et al.,). (Meng et al.) further reiterated that though the virus hits the elderly and young children very fast, its threat looms equally high on people belonging to varied age groups. It gets transmitted through droplets or metal surfaces already infected by the patients suffering from the disease. The scientists and medical professionals became engrossed in research to combat covid-19 immediately (Abdulamir and Hafidh; Meng et al.).

The educational system was thrown in disarray as very little research had been done in this area (Yan).

Worldwide social distancing was suggested which meant a conscious effort to maintain a gap among people in order to curtail the transmission of virus. The closure of schools in early March 2020 affected over 290 million students globally which later grew to 1725 billion students spread over 193 countries.

The schools were under tremendous pressure as to how students would be educated digitally without letting them suffer in any way. China in January 2020 ordered the closure of all educational institutions for a period of one year. China's Ministry of Education even postponed many important tests such as GMAT, GRE, TOEFL etc. (Crawford et al.)

The Government of India also took several steps to combat the pandemic. The University Grants Commission (UGC) also postponed examinations in all universities in an order issued on March 19th, 2020 till the end of the month. Many Central and private universities ordered closure of their institutions (Crawford et al.).

The closure of schools, colleges and Universities as a result of the pandemic gave way to e-learning. However, this transformation has put a question mark on the quality of education (Sahu).

Research Gap

Reading through the literature available on e-learning, a gap was identified. It was found that no study in the past has been conducted involving inputs from the students, who are very important stakeholders in the effective e-learning process. This paper aims to analyse the various opportunities and challenges that the students face in the virtual teaching learning interface.

Objectives of the Study

- To analyse the effectiveness of online learning during the Covid-19 pandemic
- To identify and analyze the various challenges faced by the students in online classes

Research Methodology

This study is based on primary data. Responses were collected from the students enrolled in the various colleges of University of Delhi, through a Likert scale-based questionnaire. A total sample of 1,116 responses were evaluated to draw conclusions. We have taken into consideration the qualitative aspects of the research study by using tools like Reliability analysis, non-parametric hypothesis testing and t-test is applied. The study is descriptive in nature and tries to understand the effectiveness of online learning and the various challenges faced. The study also suggests possible solutions to make virtual teaching-learning more effective.

Model

Various factors have been identified & incorporated in the questionnaire, to evaluate the effectiveness of online learning and also identify the major challenges and hurdles in the process of e-learning.

Figure 1 Determinants of E-Learning effectiveness

Figure 2 Challenges of E-learning Implementation

Hypothesis

- H1: E-learning had been effective during the COVID-19 pandemic
- H2: There were challenges faced by the students during e-learning

Statistical Results and Discussions

Cronbach's alpha (coefficient of reliability and consistency) was found to be 0.868 (Table 1 in annexure), which verifies the reliability and consistency of the scale. Normality of the data set was tested using the Kolmogorov-Smirnov goodness of fit test. On analysing the frequency tables, and running the one sample t-test, all the factors were found to be significant. However, the mean score for two of the factors: better concentration in online mode of teaching, and the challenge of health issues was found to be deviating from grouped means of the factors. Also, the responses shows that 73.3% of the students in the sample prefer physical face-to-face mode of learning.

Conclusion and Implications of the study

Amid the COVID-19 pandemic, the need to follow the Standard Operating Procedure (SOP) framed by the University Grants Commission was essential, which suggested following COVID-19 Appropriate Behaviour like Physical distancing, use of face masks, respiratory etiquettes and no large gatherings. All these measures made it possible for the university to return back to the physical face to face classroom teaching. Higher Education institutions particularly in the India faced surmounting challenges in its operations management system: planning, implementing, as well as assessing the outcomes. However, the global pandemic opened up opportunities to the country to upgrade its educational mode of delivery and transfer its attention to emerging technologies.

Based on the statistical results found we can conclude that online teaching mode and particularly the internet and information technology is equally important in the post-pandemic scenario, where new innovations have led to a surge. Higher educational institutions thereby need to take hold of the opportunity to strengthen its evidence-based practices, and try to modify the curriculum to suit

the changing pedagogy, so that the students can feel more engaged and have better levels of concentration and value addition to their knowledge base.

Now, when the spread of Coronavirus is contained, some preventive measures continue to be followed to avoid its recurrence. This is necessary for higher educational institutions as large numbers of students gather on the campuses, so the reliance on Information and Communications Technology (ICT) tools will have to continue. Also, the Institutions and the teachers must keep themselves updated with the latest teaching- learning methods and availability of e-resources to keep up with the on-going teaching learning process.

Increased levels of anxiety and other health issues like headache, and eye sight problems due to increased screen time, among the students have been a major challenge. In order to combat these various challenges imposed by Virtual teaching-learning, the educational institutions need to cater to the mental health issues by having effective mentor-ward session, and also provide access to psychiatrists and career counsellor. The curriculum also need to be modified in line with the new and emerging trends. Colleges also must provide assistance to students who do not have access to requires electronic devices like desktops and the supporting software to keep the teaching learning process as smooth as possible.

Scope for Future Research

The current study focus on the University of Delhi only, which has a total of 91 constituent colleges operating. Indian higher education system is very large and diverse. There are various types of universities, colleges and institutions offering programmes ranging from engineering, technical, medical, sciences, humanities and social sciences at undergraduate, postgraduate, and doctoral level, besides research and extension activities. Also, they vary in their geographical conditions, size, infrastructural capacity, types and duration of programmes etc. Therefore, the issues and challenges faced by them in reopening their campus also vary considerably. Therefore, further studies can be conducted taking a bigger sample covering more universities.

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Annexure

Table 1 Reliability Statistics

Cronbach's Alpha	N of Items
.868	16

Table 2 Frequency Tables

The teaching staff, in your opinion, is well acquainted to utilize the technological framework like google meet, virtual whiteboards, google classrooms etc.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	20	1.8	1.8	1.8
	Disagree	45	4.0	4.0	5.8
	Neutral	188	16.9	16.9	22.7
	Agree	341	30.6	30.6	53.3
	Strongly Agree	521	46.7	46.7	100.0
	Total	1115	100.0	100.0	

The online teaching mode has made you more regular in attending the classes vis-à-vis the conventional physical mode.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	193	17.3	17.3	17.3
	Disagree	149	13.4	13.4	30.7
	Neutral	236	21.2	21.2	51.8
	Agree	193	17.3	17.3	69.1
	Strongly Agree	344	30.9	30.9	100.0
	Total	1115	100.0	100.0	

Online teaching has significantly added value to your existing knowledge base

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	170	15.2	15.2	15.2
	Disagree	198	17.8	17.8	33.0
	Neutral	325	29.1	29.1	62.2
	Agree	241	21.6	21.6	83.8
	Strongly Agree	181	16.2	16.2	100.0
	Total	1115	100.0	100.0	

Virtual teaching mode has enabled you to give more time to other productive activities, by saving on travel time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	170	15.2	15.2	15.2
	Disagree	198	17.8	17.8	33.0
	Neutral	325	29.1	29.1	62.2
	Agree	241	21.6	21.6	83.8
	Strongly Agree	181	16.2	16.2	100.0
	Total	1115	100.0	100.0	

Open Book Examination and Continuous Assessment by the teachers have helped in improving your overall scores					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	42	3.8	3.8	3.8
	Disagree	54	4.8	4.8	8.6
	Neutral	205	18.4	18.4	27.0
	Agree	312	28.0	28.0	55.0
	Strongly Agree	502	45.0	45.0	100.0
	Total	1115	100.0	100.0	

You are able to concentrate more and feel less distracted in the online mode of teaching					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	345	30.9	30.9	30.9
	Disagree	211	18.9	18.9	49.9
	Neutral	200	17.9	17.9	67.8
	Agree	172	15.4	15.4	83.2
	Strongly Agree	187	16.8	16.8	100.0
	Total	1115	100.0	100.0	

Online teaching has promoted self-paced learning by giving access to the recorded lectures and various other e-resources					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	96	8.6	8.6	8.6
	Disagree	134	12.0	12.0	20.6
	Neutral	262	23.5	23.5	44.1
	Agree	263	23.6	23.6	67.7
	Strongly Agree	360	32.3	32.3	100.0
	Total	1115	100.0	100.0	

Due to online teaching, financial costs have been reduced (like travelling and food expenses, hostel fees, room rents for outstation students etc.)					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	26	2.3	2.3	2.3
	Disagree	38	3.4	3.4	5.7
	Neutral	113	10.1	10.1	15.9
	Agree	201	18.0	18.0	33.9
	Strongly Agree	737	66.1	66.1	100.0
	Total	1115	100.0	100.0	

You faced problems in procuring the requisite gadgets such as Smart phone/Desktop/Laptop/Tablet etc. to attend the online classes					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	189	16.9	16.9	16.9
	Disagree	179	16.0	16.0	33.0
	Neutral	176	15.8	15.8	48.7
	Agree	206	18.5	18.5	67.2
	Strongly Agree	366	32.8	32.8	100.0
	Total	1116	100.0	100.0	

You face disruptions during the online classes due to issues like Internet Connection and Electricity cut					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	464	41.6	41.6	41.6
	Disagree	244	21.9	21.9	63.4
	Neutral	196	17.6	17.6	81.0
	Agree	129	11.6	11.6	92.6
	Strongly Agree	83	7.4	7.4	100.0
	Total	1116	100.0	100.0	

Lack of knowledge and training of the virtual platforms to impart knowledge posed difficulties in attending the online classes					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	182	16.3	16.3	16.3
	Disagree	182	16.3	16.3	32.6
	Neutral	270	24.2	24.2	56.8
	Agree	235	21.1	21.1	77.9
	Strongly Agree	247	22.1	22.1	100.0
	Total	1116	100.0	100.0	

Regardless of the training provided, it was difficult to acquaint yourself to the various teaching platforms					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	133	11.9	11.9	11.9
	Disagree	194	17.4	17.4	29.3
	Neutral	278	24.9	24.9	54.2
	Agree	242	21.7	21.7	75.9
	Strongly Agree	269	24.1	24.1	100.0
	Total	1116	100.0	100.0	

There was a lot of anxiety and apprehensions in adapting from offline to online mode of teaching					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	285	25.5	25.5	25.5
	Disagree	239	21.4	21.4	47.0
	Neutral	267	23.9	23.9	70.9
	Agree	152	13.6	13.6	84.5
	Strongly Agree	173	15.5	15.5	100.0
	Total	1116	100.0	100.0	

You/Your family experienced an additional financial burden to be able to attend online classes (for example purchase of the gadgets or procuring internet connection)					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	189	16.9	16.9	16.9
	Disagree	163	14.6	14.6	31.5
	Neutral	189	16.9	16.9	48.5
	Agree	218	19.5	19.5	68.0
	Strongly Agree	357	32.0	32.0	100.0
	Total	1116	100.0	100.0	

The delay in the conduct of examination and declaration of results led to a lag in career advancement or job procurement					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	327	29.3	29.3	29.3
	Disagree	235	21.1	21.1	50.4
	Neutral	313	28.0	28.0	78.4
	Agree	115	10.3	10.3	88.7
	Strongly Agree	126	11.3	11.3	100.0
	Total	1116	100.0	100.0	

The online mode of teaching has led to an increase in the screen time, leading to various health issues like headaches, eye sight problems, lack of appetite, backaches etc.					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Strongly Disagree	716	64.2	64.2	64.2
	Disagree	188	16.8	16.8	81.0
	Neutral	102	9.1	9.1	90.1
	Agree	64	5.7	5.7	95.9
	Strongly Agree	46	4.1	4.1	100.0
	Total	1116	100.0	100.0	

If given a choice, you would want to resume to Physical face-to-face mode of learning					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	No	298	26.7	26.7	26.7
	Yes	818	73.3	73.3	100.0
	Total	1116	100.0	100.0	

Table 3 Normality Testing

	Kolmogorov-Smirnova		
	Statistic	**df**	**Sig.**
The teaching staff, in your opinion is well acquainted to utilize the technological framework like google meet, virtual whiteboards, google classrooms etc.	.274	1115	.000
The online teaching mode has made you more regular in attending the classes vis-à-vis the conventional physical mode	.185	1115	.000
Online teaching has significantly added value to your existing knowledge base	.152	1115	.000
Virtual teaching mode has enabled you to give more time to other productive activities, by saving on travel time	.235	1115	.000
Open Book Examination and Continuous Assessment by the teachers have helped in improving your overall scores	.259	1115	.000
You are able to concentrate more and feel less distracted in the online mode of teaching	.184	1115	.000
Online teaching has promoted self-paced learning by giving access to the recorded lectures and various other e-resources	.187	1115	.000
Due to online teaching, financial costs have been reduced (like travelling and food expenses, hostel fees, room rents for outstation students etc.)	.387	1115	.000

Table 4 One-Sample Test

	Test Value = 0.05					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
The teaching staff, in your opinion is well acquainted to utilize the technological framework like google meet, virtual whiteboards, google classrooms etc.	142.252	1114	.000	4.11413	4.0574	4.1709
The online teaching mode has made you more regular in attending the classes vis-à-vis the conventional physical mode	74.441	1114	.000	3.26031	3.1744	3.3462
Online teaching has significantly added value to your existing knowledge base	78.178	1114	.000	3.00830	2.9328	3.0838
Virtual teaching mode has enabled you to give more time to other productive activities, by saving on travel time	95.770	1114	.000	3.74283	3.6661	3.8195
Open Book Examination and Continuous Assessment by the teachers have helped in improving your overall scores	123.966	1114	.000	4.00650	3.9431	4.0699
You are able to concentrate more and feel less distracted in the online mode of teaching	59.894	1114	.000	2.63161	2.5454	2.7178
Online teaching has promoted self-paced learning by giving access to the recorded lectures and various other e-resources	92.110	1114	.000	3.53924	3.4638	3.6146
Due to online teaching, financial costs have been reduced (like travelling and food expenses, hostel fees, room rents for outstation students etc.)	151.230	1114	.000	4.37152	4.3148	4.4282
You faced problems in procuring the requisite gadgets such as Smart phone/Desktop/Laptop/Tablet etc. to attend the online classes	73.802	1115	.000	3.29140	3.2039	3.3789
You face disruptions during the online classes due to issues like Internet Connection and Electricity cut	55.799	1115	.000	2.16416	2.0881	2.2403
Lack of knowledge and training of the virtual platforms to impart knowledge posed difficulties in attending the online classes	75.747	1115	.000	3.11398	3.0333	3.1946
Regardless of the training provided, it was difficult to acquaint yourself to the various teaching platforms	81.717	1115	.000	3.23674	3.1590	3.3145
There was a lot of anxiety and apprehensions in adapting from offline to online mode of teaching	64.471	1115	.000	2.67133	2.5900	2.7526
You/Your family experienced an additional financial burden to be able to attend online classes (for example purchase of the gadgets or procuring internet connection)	74.715	1115	.000	3.30036	3.2137	3.3870
The delay in the conduct of examination and declaration of results led to a lag in career advancement or job procurement	63.228	1115	.000	2.48226	2.4052	2.5593
The online mode of teaching has led to an increase in the screen time, leading to various health issues like headaches, eye sight problems, lack of appetite, backaches etc.	49.201	1115	.000	1.63817	1.5728	1.7035

Table 5 ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
The online teaching mode has made you more regular in attending the classes vis-à-vis the conventional physical mode	Between Groups	210.790	4	52.698	26.933	.000
	Within Groups	2171.841	1110	1.957		
	Total	2382.631	1114			
Online teaching has significantly added value to your existing knowledge base	Between Groups	298.708	4	74.677	53.808	.000
	Within Groups	1540.503	1110	1.388		
	Total	1839.211	1114			
Virtual teaching mode has enabled you to give more time to other productive activities, by saving on travel time	Between Groups	165.068	4	41.267	26.446	.000
	Within Groups	1732.074	1110	1.560		
	Total	1897.143	1114			
Open Book Examination and Continuous Assessment by the teachers have helped in improving your overall scores	Between Groups	128.758	4	32.189	30.573	.000
	Within Groups	1168.683	1110	1.053		
	Total	1297.440	1114			
You are able to concentrate more and feel less distracted in the online mode of teaching	Between Groups	164.350	4	41.087	20.418	.000
	Within Groups	2233.624	1110	2.012		
	Total	2397.973	1114			
Online teaching has promoted self-paced learning by giving access to the recorded lectures and various other e-resources	Between Groups	285.548	4	71.387	51.178	.000
	Within Groups	1548.323	1110	1.395		
	Total	1833.871	1114			
Due to online teaching, financial costs have been reduced (like travelling and food expenses, hostel fees, room rents for outstation students etc.)	Between Groups	111.724	4	27.931	33.475	.000
	Within Groups	926.160	1110	.834		
	Total	1037.883	1114			

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