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A Study of Perceptions of Students and Teachers Towards E-Learning and its Effectiveness – A Cross-Sectional Study During COVID-19 Lockdown in JNUIMSRC

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ABSTRACT

Background: One severely impacted sector during a COVID-19 pandemic is the field of Medical Education. Initially, when the Medical students were sent home based on Government Lockdown orders, it was very hard to imagine that it would change the way of teaching especially in this field. After successfully adjusting to this new scenario the question of the hour is how many students and the teachers did adjust? What were their perceptions? And overall what was the effectiveness of this exercise? This study puts in a sincere effort to find the same.

Methods: The student's and the teacher's perceptions were taken using Likert's scale when the online sessions were going on. Another student's perception was taken about a live lecture class in a classroom. The perception scores of the students were compared. An online test was taken after online sessions which were proctored by teachers and the marks attained by the students reflected the effectiveness of the programme.

Results: The perception score of the students was better for live classes than that for the online session. There is no significant difference between the marks scored after the online session when compared to the marks scored when live lectures were being taken.

Conclusion: The medical students have been benefitted by this exercise during the pandemic. Further, this mode of teaching should be implemented when regular classes will go on.

Key Words: Cross-sectional, Perception, Effectiveness, Online, Teaching

INTRODUCTION

The Corona pandemic now scientifically called as the covid 19 pandemics by the WHO has gripped the world and the tentacles are spreading. Perhaps this pandemic has given us a suitable platform to scratch our brains and think what is happening in the Medical School? Teaching in Medical education especially the theoretical part was done by taking traditional lectures in classrooms.^{1,2} A large number of people can be trained at a single point in time. This is a boon especially in our country where Medical faculties are not easily available. But we are so much used to this system that we are feeling troubled even by the thought of bringing a change.^{1,3}

In desperate times the need of the hour is taking desperate actions. It is rightly said that necessity is the mother of all inventions. This lock-down when announced last month halted all forms of academics that was happening in the nation. This condition was never expected and perhaps the teaching fraternity was never exposed to such conditions. But since everything happened in a flash there was no scope for planning. Everyone in academics was involved to come up with ways to handle the situation. And the faculty with their thinking caps on, against all odds, was able to come up with the solution of Online teaching through an interface called a ZOOM cloud meeting. Now since this mode of teaching is taking place in the college, it is the time to understand

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the student’s perceptions and the actual effectiveness of the programme. This study puts to find the student’s perceptions and the impact of the programme on the learning of students to be beneficial to the faculty in the future.

The primary objective is to evaluate the perception of the students and teachers towards online teaching. The secondary objective is to evaluate the performance of students.

MATERIALS AND METHODS

This study was done in JNUIMSRC from 24th March to August 31st 2020. The study was done in two phases. 600 students were requested to participate in this study after taking written consent.

1st phase: The perception of students and teachers were taken using Likert’s scale when the online sessions were going on. The Likert’s scale was constructed based on the question-

naire which was validated by sending a copy of the questions to three HOD’s in the pre-clinical Departments. Perceptions of the students about offline teaching through lectures were taken using the same questionnaire.

2nd phase: An online proctored based examination was taken and the performance of students was assessed.

Statistical Analysis

Description analysis for perception scores and MCQ scores of online teaching. Unpaired t-Test for perception scores and Unpaired t-Test for MCQ scores were used.

RESULTS

The perception of students and teachers were taken using Likert’s scale when the online sessions were going on which was shown in Table 1 and 2 and Graph 1.

Table 1: Perception score of the Students

	Online Classes					Live Classes					Z	p-value
	Mean	SD	Max	Median	Min	Mean	SD	Max	Median	Min		
PERCEPTION	35.5	3.25	40	36.52	29	47.5	2.61	51	48	41	-8.651	<0.001

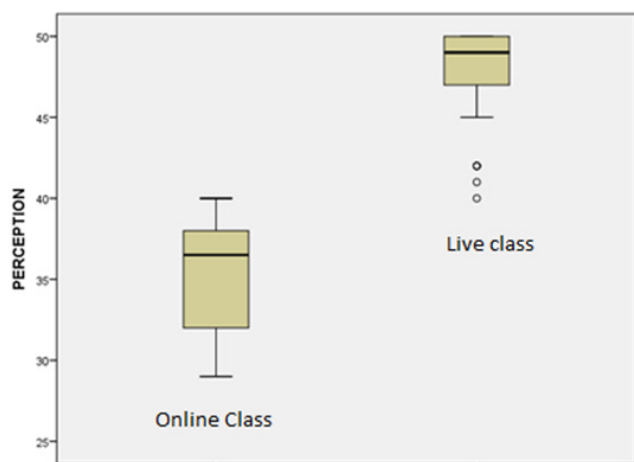


Figure 1: Perception score of the students.

Table 2: Perception score of the teachers

Teachers Perception	Mean Perception score	Standard Deviation
	64.52	±3.76

In this study, the perception scores of the students were found to be better when they were asked about the live lectures in a classroom setting as compared to when asked about the online session. There were some initial hiccups when we started this exercise. But when we compared the marks of the students scored in the proctored online examination to

that of the marks scored after attending the live lectures there was no significant difference between the two. This gives us a clear idea that they were able to cope up with the change in the system shown in Table 3, 4,5.

Table 3: Marks scored (Out of 50 marks)

Subject:	Average Marks Scored:
BIOCHEMISTRY	31.21795
PHYSIOLOGY	28.27389
ANATOMY	29.87
FORENSIC MEDICINE	31.95973
MICROBIOLOGY	29.32886
PATHOLOGY	32.22
PHARMACOLOGY	34.27
ENT	31.67687
COMMUNITY MEDICINE	31.21795
OPHTHALMOLOGY	26.39116
OBG	34.81333
MEDICINE	37.61333
PAEDIATRICS	34.27
SURGERY	35.93333

Table 4: Compiled marks (Year wise)

Year	FIRST	SECOND	THIRD	FOURTH
Mean Marks	29.78728	31.94465	29.76199	35.6575
Standard Deviation	1.473774	2.026957	2.928233	1.476385

Table 5: Mean Scores of all the Years

Mean Scores	Standard deviation
31.7878	2.7751

So this study was one such sincere effort to find the perspectives of the students and the teachers in bringing a change. The study also tries to find out the effectiveness of this exercise **Table 6**.

Table 6: Comparison of scores in normal live classes vs Online classes

Group	Total Marks	Mean	Std. Deviation	P-value
Perception Online class	50	31.7878	2.7751	Not Significant
Normal live class	50	34.7698	1.628	

DISCUSSION

E-learning which refers to the Electronic learning is the use of technology or an electronic media is used as a platform to give the students the content, make them understand the subject and also helps in their assessment.⁴ E-Learning has a lot of potential in its easiness to use, the vastness of understanding and the information can be sought after the student's convenient time.⁵ But as discussed earlier the conventional lectures are so much buried in the system that it is very difficult to be uprooted. But things have changed in the recent past. With the introduction of the competency-based medical education, these medical students are expected to hit the ground running.⁶ E-learning is the ability to understand, interpret and apply this knowledge that is gained from a digital technology.⁷

This epidemic has created a very good platform for medical students as well as the faculties to bring in a change. The success of the programme depends on a lot of factors. These can be students centric as well as the faculty centric.^{8,9} For a long time, the faculties were unable to cope up with the pressure for this change. They were even reluctant.^{9,10} But this time with this pandemic there was no alternative. There were very few efforts which were put to understand the difficulties and the solutions to implement e-learning.¹¹⁻¹² So this study was one such sincere effort to find the perspectives of the stu-

dents and the teachers in bringing a change.¹³ The study also tries to find out the effectiveness of this exercise.

In this study, the perception scores of the students were found to be better when they were asked about the live lectures in a classroom setting as compared to when asked about the online session. There were some initial hiccups when we started this exercise. But when we compared the marks of the students scored in the proctored online examination to that of the marks scored after attending the live lectures there was no significant difference between the two. This gives us a clear idea that they were able to cope up with the change in the system.

The perceptions of the faculty gave us a clear idea of how they felt the change. They welcomed the change and were quite enthusiastic. This turns out to be due to the effort of the Medical Council of India in bringing out the revised basic course workshops, an advanced course in Medical Education and other faculty training programmes. The faculties have been trained and thus were able to quickly adapt to the challenges thrown to them.

CONCLUSION

This study sheds some light on the perceptions of the teachers and the students regarding the online classes in medical teaching. Even though at the beginning there was a lot of hindrance from the students as well as the faculties, the effects were fruitful. The results of the students in the proctored exams speak volumes. The Medical students of this generation with their knowledge and acquaintance to technology background can take the burden of change. The results of the present study show that online teaching can effectively supplement regular offline teaching post lockdown in one or other way.

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Appendix 1: Likert’s scale for Perception of students:

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

Questionneries

- The session stimulated my interest in the topic
- No difficulties in orientation of the class
- The time and pace of the class was satisfactory
- The session was like regular class and there was no difficulty to keep up
- The teaching was easily understandable
- You were able to take down necessary notes
- The objectives of the lesson were clear
- The session was not monotonous
- The effectiveness of teaching in meeting the objectives
- How attractive is the session if continued after lockdown for after hour classes

Appendix 2: Likert’s scale for Teachers:

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

Questionneries

- The online session stimulated my interest in teaching in the topic when compared to live class

- No difficulties in making the students oriented to class when compared to live class
- The time and pace of the class was satisfactory when compared to live class
- The session was like regular class and it was not difficult to keep up when compared to live class
- Interacting with the students was easy when compared to live class
- Further guidance was not needed when compared to live class
- The objectives of the lesson were clearly met when compared to live class
- Was there a network issue
- Was the session monotonous when compared to live class
- The effectiveness of teaching when compared to live class
- How engaging did you find the session when compared to live class
- How attractive is the session if continued after lockdown for after hour classes when compared to live class
- Rate the class when compared to live class
- Recommend to others when compared to live class
- According to you what would students think of your online class when compared to live class