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A study of online video animation vs live specimen based learning in pathology practicals - A randomised experimental cross sectional study in MBBS 2nd year students

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Abstract

There are a lot of changes that are happening in the field of Medical Education. Gone are the days where only lecture used to happen and the whole batch of students used to attend the same. But then when the Covid hit us, we had to look into ourselves. We had to use whatever methods possible to teach effectively. The students were sent home and it became really difficult to teach them online. But video based animations were used to teach. But was it effective? What was the student's perception? To know the answer to this question this effort has been put.

Keywords: Video, animation, Covid, Live specimen based teaching

Introduction

There are a lot of changes that are happening in the field of Medical Education. Gone are the days where only lecture used to happen and the whole batch of students used to attend the same. But then when the Covid hit us, we had to look into ourselves. We had to use whatever methods possible to teach effectively. The students were sent home and it became really difficult to teach them online. But video based animations were used to teach. To know the answer to this question this effort has been put. Video recordings of lectures offer various benefits to the user. He can repeat the lecture subsequently at any time and place ^[1]. Students might gain time because the way to the lecture hall is no longer necessary ^[2]. The speed in which the lecture proceeds can be determined by the student himself ^[3]. This is also true for self-paced learning ^[4]. Video lectures can be repeated as often as wanted, which is particularly useful for a deep understanding or for the preparation of exams ^[5]. Was the teaching method effective? What was the student's perception?

Aims and objectives

- To study the perception score between the two groups.
- To study the MCQ score between the two groups.

Materials and methods

This study was done in the Department of Pathology, JNUIMSRC, Jaipur.

This study was conducted from May 1st 2021 to August end 2021.

All students from the 2nd year MBBS were selected.

The total sample size was thus 100.

The design of the study was Interventional and Cross-over.

The students were divided into 2 groups.

Validated Questionnaire, MCQ and OSPE.

Exclusion Criteria: Students who did not give consent.

Data Collection: Likert's scale analysis.

Procedure

One hundred students were selected based upon stratification. Only students who were $\pm 2SD$ in the last examination were selected for this study.

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The students were taught Pathology Practical using online video animations. When they came back to college to attend the offline mode of teaching, a validated Likert's scale based questionnaire was given to them to understand their perception. A MCQ examination was also held. The exam was designed such that they had pictures of the specimen and the students would tick the correct option. Then the same students were made to undergo the live specimen based pathology practical teaching. At the end of this

session, again the validated Likert's scale based questionnaire was given to them to understand their perception. A MCQ examination was also held.

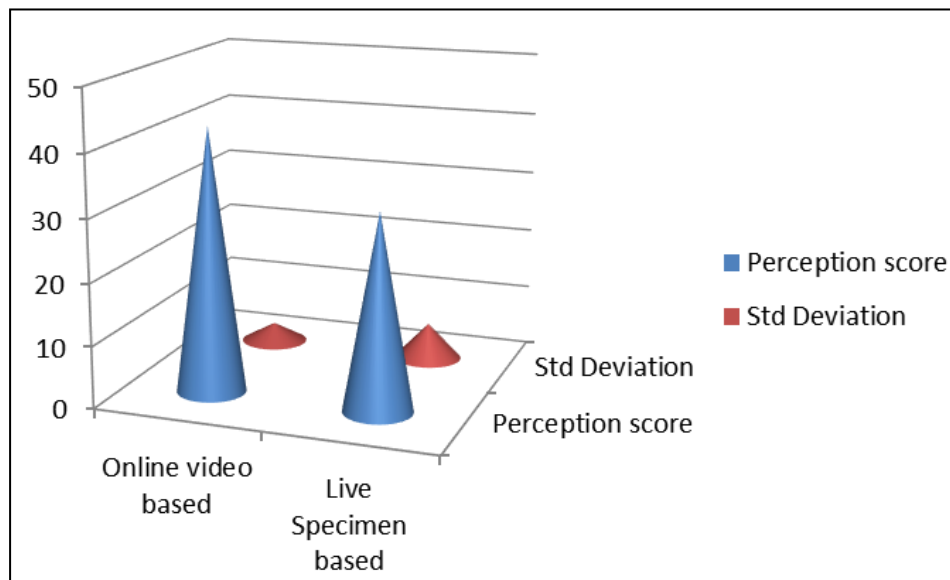
Statistical analysis

The perception score was analysed using a student's t-test. T-test to compare the difference in the two methods of teaching in terms of Multiple Choice Questions score.

Results

Table 1: Describing the perception scores between online and the offline classes

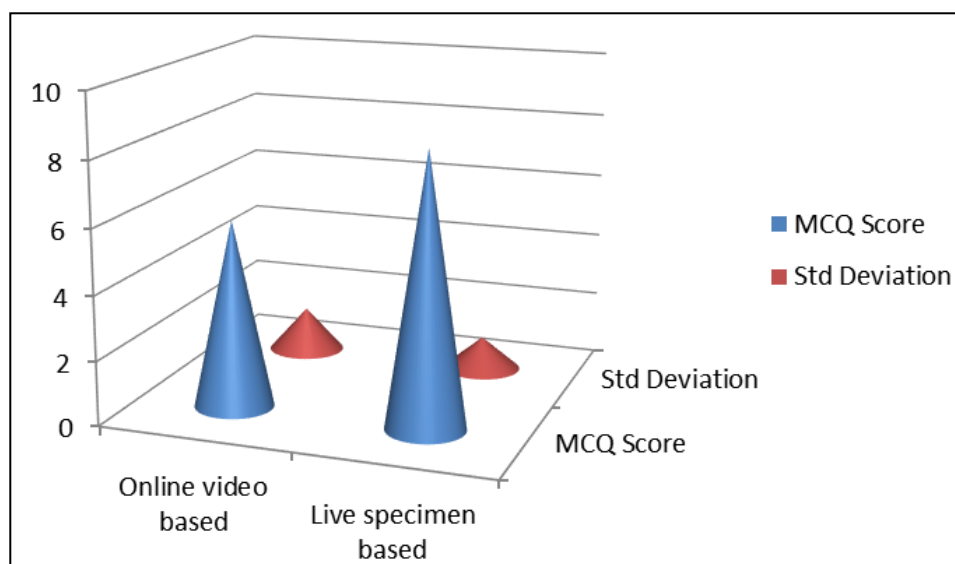
	Group 1 (N=50)	Group 2 (N=50)	P Value
	Mean±SD	Mean±SD	
Perception	42.7±3.05	31.62±5.86	<0.001



Graph 1: Describing the perception scores between online and the offline classes

Table 2: Describing the MCQ scores between online and the offline classes

	Group 1 (N=50)	Group 2 (N=50)	P Value
	Mean±SD	Mean±SD	
MCQ score	5.84±1.38	8.44±1.03	<0.001



Graph 2: Describing the MCQ scores between online and the offline classes

Discussion

Paegle *et al.* [6] compared the effect of live and video lectures on pathology. They found no significant differences in test questions ($n = 59$ 4th-year medical students, 129 multiple-choice questions, average score and standard deviation live/video 87.56 (+4.80) vs 87.99 (+6.46)). Subjectively, however, the students thought they had learned more from the live lectures. Schreiber *et al.* [7] came to a similar conclusion: In a test after 15-min sequences on the subjects of 'vasculitis' and 'arthritis', the video and the live group were equally good ($n = 66$ medical students, 34 multiple-choice questions, live/video 90.2% vs 87.8%, $p = 0.15$). But while 88% of the students rated the live performance as very good, the video presentation was rated equally well by only 62%. Ramlogan *et al.* [8] came to a different conclusion. They offered three almost 15-min sequences each live and on video. The participants of the live lesson had significantly better results in a test than the participants of the video lesson ($n = 85$ students of dentistry, average score and standard deviation live/video 74.9 (+14.9) vs 68.6 (+16.3)). In their subjective assessment, however, 97% of the participants felt an improvement of their clinical abilities by the videos. Only 78.8% felt an improvement of their clinical abilities by the live lessons.

Conclusion

Even though the online video based animation based teaching was better perceived the good old live specimen based teaching is more effective in teaching the students.

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