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Original research article

A study of video animation online flipped classroom based SDL vs Bed-side learning in teaching Cardiology cases in Internal Medicine

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Abstract

Presently, the field of medical education is going through a number of substantial developments that are currently taking place. There was a time when students were merely required to pay attention to lectures, and when the entire class would attend together. However, that time has long since past. However, during the advent of the Covid epidemic, we were compelled to engage in self-reflection regarding our actions. As a result of this, we were compelled to make use of every method that was available to us in order to instruct in an efficient manner. Educating the children remotely to ensure that they could continue their education became an exceedingly challenging task once the children had left. In spite of this, animations that were based on videos were employed with the intention of the purpose of imparting teaching. To what extent, on the other hand, did it turn out to be successful? In what way did the learner grasp or interpret the material that was presented to them? As a means of determining the answer to this inquiry, a considerable amount of effort has been placed into the process.

Keywords: Video animation, flipped classroom, SDL, specimen based, learning, Cardiology in Gen Medicine.

Introduction

Currently, the sector of medical education is experiencing some noteworthy transformations. At last, it is time to bring an end to the era of exclusive lectures, where all students would attend the same exact session. Nevertheless, following the onset of the Covid-19 pandemic, we felt compelled to engage in self-reflection. We were obligated to utilize all available methods to ensure effective instruction. The level of difficulty in remotely training the children significantly increased after they completed their courses and were discharged. Conversely, animations derived from video material were employed for educational purposes. The resolution of this issue has been the focus of extensive scrutiny and inquiry. The utilisation of video recordings of class lectures provides users with a multitude of advantages. It provides the possibility to replay the lecture once it has finished, regardless of the time or place [1]. Due to the elimination of the need to commute to the lecture hall, students now have the chance to save time [2, 3] the learner has the autonomy to select the pace at which the lecture advances in its sequence. The same approach applies to self-paced learning [4]. The capacity to repeat video lectures endlessly is a notable advantage, especially for developing a thorough understanding or for exam readiness [5]. Is there any empirical data to support the claim that the teaching technique resulted in positive outcomes? What was the student's comprehension or analysis of the subject matter? Upon the children' return to their usual classrooms, we were afforded the opportunity to properly grasp the differentiation between the two approaches.

Aims and Objectives

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

Materials and Methods

The study was undertaken at the Department of Medicine from March 1st, 2024.
All students in the last year of the MBBS curriculum were selected.
As a result, the total number of participants in the sample was 150.
The study was structured as an interventional and cross-over trial.
The students were divided into two separate groups.
The accuracy and reliability of the Questionnaire and Objective Structured Practical Examination (OSPE) have been validated and confirmed.

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Exclusion Criteria: Students who did not give consent.

Data Collection: Examination of Likert Scale Responses.
A stratified selection strategy was used to choose a total of one hundred fifty pupils. The participants chosen for this study were restricted to those who obtained a score on the latest assessment that fell within two standard deviations (±2SD) of the average.
The students received instruction in the cardiology classes through the utilisation of online video animations in flipped classroom SDL. Then, they were administered a pre-validated Likert scale questionnaire. The questionnaire aimed to assess the students' perceptions. Furthermore, an Objective Structured Practical Examination (OSPE) session was conducted. The inspection was designed to integrate visual representations and palpable instances of the specimen, use photographs and other physical samples. Afterwards, the same students were required to take part in a bed side learning of cardiology in Gen medicine. After the session ended, the participants were provided with a validated Likert scale questionnaire to assess their perception level. The OSPE session was held for the second time.

Statistics
The perception score was assessed using a student's t-test.
A t-test will be performed to compare the discrepancy between the two teaching methods in relation to the OSPE scores.

Results

Table 1: Perception scores

Perception Scores											
Online Video Animation based flipped SDL					Bed side Learning						
Mean	SD	Max	Min	Median	Mean	SD	Max	Min	Median	Z	p-value
34.11	1.93	41	28	36.5	41.37	3.83	48	22	40.89	6.35	<0.001

Table 2: The OSPE Scores:

Method	N	Mean OSPE Scores	Std Deviation	t	df	P value
Online Video Animation based flipped SDL	75	35.58	1.83	-9.48	49.893	<0.001
Bed side Learning	73	42.94	1.90			

2 students did not participate in the OSPE Exams.

Discussion
The students perceived that they had acquired a substantial quantity of knowledge from the live lectures, which was a subjective evaluation of their own learning experience. Paegle *et al.* [6] conducted a study to assess the effects of live lectures versus virtual courses on pathology. Regarding the exam questions, there were no statistically significant changes seen among the participants. A total of 594 fifth-year medical students participated in the study and provided responses on 129 multiple-choice questions. The mean score for the live group was 87.56 with a standard deviation of 4.80, but the video group had a mean score of 87.99 with a standard deviation of 6.46. Both of them exceeded the mean score. Schreiber and colleagues [7] reached a similar conclusion: Medical school students were administered a test involving the viewing of films and live demonstrations on the topics of "vasculitis" and "arthritis" in sequences lasting fifteen minutes each. According to the results, it was concluded that the performance of both the live and video groups was similar. The examination consisted of 34 questions with multiple-choice options and was administered to a total of 66 medical students. The live group achieved a success rate of 90.2%, but the video group obtained a score of 87.8% over the duration of the trial. The statistical analysis yielded a p-value of 0.15, indicating that the observed difference in scores between the two groups is not statistically significant. However, while 88% of the students regarded the live performance as excellent, just 62% of them assessed the video presentation as equally excellent. Ramlogan *et al.* [8] arrived to a different outcome in their investigation. They presented three segments, each lasting roughly fifteen minutes, all of which were caught on video and broadcasted live. The students who attended the live session achieved markedly higher scores on the assessment in comparison to the students who watched the video lecture. The study had a sample of 85 dentistry students. The mean score and standard deviation for the group that attended live lectures were 74.9 (+14.9), whereas the group that got video lessons had a mean score of 68.6 (+16.3). Out of the participants in the study, 97% reported that their clinical abilities had improved as a direct consequence of seeing the films. Approximately 78.8% of the participants reported a direct enhancement in their clinical skills as a consequence of attending the live lectures.

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Conclusion

The conventional technique of teaching bed side is more efficacious in educating students compared to the online video-based flipped SDL method, which received favourable reviews from students.

References

1. McNulty JA, Hoyt A, Chandrasekhar AJ, *et al*. A threeyear study of lecture multimedia utilization in the medical curriculum: Associations with performances in the basic sciences. Med Sci Educator. 2011;21(1):29-36.
2. Nieder GL, Borges NJ, Pearson JC. Medical student use of online lectures: exam performance, learning styles, achievement motivation and gender Med Sci Educator. 2011;21(3):222-6.
3. Spickard AI, Alrajeh N, Cordray D, *et al*. Learning about screening using an online or live lecture. J Gen Int Med. 2002, 17
4. Cardall S, Krupat E, Ulrich M. Live lecture versus video-recorded lecture: are students voting with their feet? Acad Med. 2008;83(12):1174-1178.
5. Bridge PD, Jackson M, Robinson L. The effectiveness of streaming video on medical student learning: a case study. Med Edu Online. 2009;14:11.
6. Paegle RD, Wilkinson EJ, Donnelly MB. Videotaped vs traditional lectures for medical students. Med Educ. 1980, 14.
7. Schreiber BE, Fukuta J, Gordon F. Live lecture versus video podcast in undergraduate medical education: a randomised controlled trial. BMC Med Educ. 2010;10:68.
8. Ramlogan S, Raman V, Sweet J. A comparison of two forms of teaching instruction: Video vs. live lecture for education in clinical periodontology, Eur J Dent Educ. 2014;18(1):31-38., [Crossref], [Web of Science