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Original research article

A STUDY OF EFFICIENCY AND STUDENTS' PERCEPTION OF VIDEO ANIMATION IN LEARNING SURGICAL PROCEDURES DURING COVID 19 LOCKDOWN:

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Abstract

In the realm of visual communication, animation is a medium that is both evolving and interesting. There is a possibility that it serves multiple purposes, including those of education, advertisement, and amusement. The purpose of this study is to carry out research on the utilisation of animation in the instruction of minor surgical procedures. The field of medical education is undergoing a number of significant changes at the moment. The day has passed when lectures were the only thing that students needed to pay attention to, and when the entire class would attend together. Nevertheless, during the outbreak of the Covid epidemic, we were driven to engage in introspection. Because of this, we were obligated to make use of every available methods in order to instruct in an effective manner. After the children were gone, it became extremely difficult to educate them remotely to continue their education. Nevertheless, animations based on video were utilised for the aim of providing instruction. To what extent, however, did it prove to be effective? What was the student's understanding or interpretation of the subject matter? For the purpose of determining the response to this query, a significant amount of effort has been utilised.

Keywords: Video animation, live minor surgery, learning, effectiveness

Introduction

The field of medical education is undergoing a number of significant changes at the moment. Finally, the time has come to put an end to the age of exclusive lectures, in which the entire student body would attend the same specific session. However, subsequent to the emergence of the Covid-19 pandemic, we were driven to engage in introspection. We were required to make use of any and all accessible methods in order to guarantee efficient instruction. There was a significant increase in the difficulty of instructing the children remotely after they were discharged from their courses. On the other hand, animations based on video material were utilised for instructional reasons. The answer to this topic has been the subject of a significant amount of investigation

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and investigation. The user benefits in a variety of ways from the utilisation of video recordings of class lectures. It offers the capability to repeat the lecture after it has been completed, independent of the time or location [1]. Because they are no longer required to travel to the lecture hall, students have the opportunity to save time [2]. The student is able to choose the rate at which the lecture moves forward in its progression [3]. A same principle applies to learning at one's own pace [4]. The ability to replay video lectures indefinitely is a significant benefit, particularly when it comes to acquiring a comprehensive grasp or for the purpose of exam preparation [5]. Is there evidence that the instructional technique produced favourable outcomes? What was the student's understanding or interpretation of the subject matter? As soon as the pupils went back to their regular classrooms, we were given the chance to fully comprehend the distinction between the two approaches.

Aims and Objectives

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

Materials and Methods

The research was carried out at the Kanachur Institute of Medical Sciences in Mangalore, specifically in the Department of General Surgery within the institution. Between the beginning of June 2021 and the end of August 2021, the research was carried out. All of the students who were in their last year of the MBBS programme were evaluated and selected. Therefore, the total number of people in the sample was 150. Both an interventional and a cross-over research were employed in the design of the inquiry. Within the student body, there were two main groups that were separated. Verification and confirmation have been performed to ensure that the questionnaire and the Objective Structured Clinical Examination (OSCE) are valid and dependable resources. Those students who did not grant their consent were excluded from the study. Analysis of the Likert Scale is part of the data collection process.

By employing a stratified sampling approach, a total of one hundred fifty students were selected. The selection of students for this study was limited to those who had achieved a score on the most recent assessment that was within two standard deviations (±2SD) of the mean. Online video animations were used to provide the students with teaching in fundamental surgical techniques that they could put into practice. A pre-validated Likert scale questionnaire was given to the students after their return to college for in-person training. The purpose of the questionnaire was to evaluate the students' perceptions. Additionally, a session of the Objective Structured Clinical Examination (OSCE) was carried out. Through the use of photographs and other tangible samples of the specimen, the examination was designed to incorporate both visual representations and tangible instances. Following that, exactly the same pupils were obliged to take part in a practical training session that was centred on actual surgical procedures. Following the conclusion of this session, the participants were once more given a confirmed Likert scale questionnaire in order to evaluate their level of perception. This was the second time that the OSCE session was held.

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Statistics

The perception score was evaluated using a student's t-test. A t-test will be conducted to compare the difference between the two teaching approaches in terms of the scores of OSPE.

Results

Table 1: Perception scores Online Video Animation

Online Video Animation				
Mean	**SD**	**Max**	**Min**	**Median**
36.11	7.1	50	16	35.5

Table 2: Perception Scores of Live Surgery

Live Surgery				
Mean	**SD**	**Max**	**Min**	**Median**
48.23	2.43	50	36	49.5

Table 3: Correlation

Online Video Animation		Live Surgery			
Mean	**Median**	**Mean**	**Median**	**Z**	**p-value**
36.11	35.5	48.22	49.5	7.51	<0.001

Table 2: The OSPE Scores

Method	N	Mean OSPE Scores	Std. Deviation	t	df	P value
Online video animation	75	32.49	8.21	-9.4	60.3	<0.001
Live surgery	75	47.59	3.19			

Discussion

The students considered themselves to have gained a greater amount of knowledge from the live surgery, which was a subjective assessment of their own learning experience. A comparison was made between live lectures and video lectures by Paegle *et al*. [6] in order to evaluate the impact that each types of lectures have on surgery learning. With regard to the exam questions, there were no changes that could be considered statistically significant among the participants. In the study, there were 594 medical students in their fifth year who responded to 129 questions with multiple-choice answers. The average score for the live group was 87.56 (+4.80), while the standard deviation for the video group was 87.99 (+6.46). They were both higher than the average score. An analogous conclusion was achieved by Schreiber and colleagues [7]: Students in medical school were given a test in which they were shown movies and

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live demonstrations on the subjects of "vasculitis" and "arthritis" in sequences that lasted for fifteen minutes each. Based on the findings, it was determined that the performance of both the live and video groups was comparable. The examination was comprised of 34 questions with multiple-choice answers and was given to 66 medical students. The results for the live group were 90.2%, while the scores for the video group were 87.8% for the course of the study. With a p-value of 0.15, the statistical analysis provided evidence that the difference in scores between the two groups did not constitute a statistically significant difference. On the other hand, despite the fact that 88% of the students rated the live performance as very good, just 62% of them rated the video presentation as equally good. Ramlogan *et al*. [8] came at a divergent conclusion in their research. Three approximately fifteen-minute parts were provided by them, all of which were recorded on video and shown in real time. When compared to the students who viewed the video lecture, the students who participated in the live session obtained significantly higher scores on the examination. The study included 85 dentistry students, and the average score and standard deviation for the group that received live lessons were 74.9 (+14.9), whereas the group that received video lessons received 68.6 (+16.3). Ninety-seven percent of the individuals who took part in the study indicated that they had improved their clinical skills as a direct result of seeing the films. Approximately 78.8 percent of the participants felt that they had improved their clinical skills as a direct result of attending the live lectures.

Conclusion

While the online video-based surgical teaching method was well-received, the traditional live demonstration method is more effective in educating students.

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