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EFFECTIVENESS OF VIDEO ASSISTED LEARNING COMPARED TO TRADITIONAL LECTURE IN TEACHING BIOCHEMISTRY FOR THE FIRST YEAR MEDICAL STUDENTS

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ABSTRACT

Background: With each passing year it is becoming more and more difficult to retain the interest of the first year medical students as they are only exposed to didactic lectures with no contact with the patients. Therefore the aim and objectives of this study was to compare the learning outcomes and find the effectiveness of video assisted and traditional learning among first year medical students in Biochemistry. **Materials and Methods:** The study included 150 students who were divided into two groups. Each group was exposed to one traditional lecture and one video assisted learning. A post-test after each session was done and feedback taken through a questionnaire. Data was analyzed by an independent sample t test and frequency distribution (%). **Results:** Comparison of post test scores shows a significant difference in the learning outcomes between the traditional lecture and video assisted learning. The response scores for the items in the feedback showed response more favourably to video based learning than traditional lectures. In the open ended questions more preference was given to blended learning. **Conclusion:** Video Assisted learning helped the student in better understanding of the subject than traditional lecture. Blended learning was the preferred method of learning.

KEYWORDS - Blended learning, Traditional lecture, Video Assisted Learning

INTRODUCTION:

Biochemistry is the scientific study of the chemistry of living systems, their chemical pathways, and information transfer systems. With each passing year it is becoming more and more difficult to retain the interest of the first year medical students as they are only exposed to didactic lectures with no contact with the patients. Therefore education programs are faced with the challenge of finding innovative ways to facilitate learning in the students. Studies have shown that compared to traditional lectures, video assisted learning is a more effective medium that not only provides motivation but better understanding and hence more satisfaction during the learning process **(1, 2)**. Therefore the aim of this study was to compare the learning outcomes of video assisted learning and traditional learning in biochemistry. Therefore the objectives of this study is to compare the difference in post test scores by MCQ's test following video assisted learning and traditional lecture among 1st year medical students of Biochemistry and to find out the effectiveness of the video assisted learning over the traditional lecture.

MATERIALS AND METHODS

The target population were the 1st year medical students in Biochemistry. The sample size was 150, and the sampling was purposive. The design of the study was quantitative and interventional, video

assisted learning and feedback. Institutional ethical committee clearance was obtained. The details of the study were explained to the students and informed consent was obtained from the participants. The setting, where the study was conducted was in a lecture hall, at ASRAM medical college, Eluru. The students were divided into 2 groups, the control group and interventional group of 75 students each.

In the first session the interventional group was exposed to video assisted learning and the control group to the traditional lecture on the topic "Replication". In the second session the exposure was reversed by cross over and the topic was "Transcription". A post test consisting of 10 MCQ's after the video assisted learning or traditional lecture and feedback through a questionnaire. The students were given a questionnaire which consisted of 10 closed questions (items) and two open ended questions. The word lecture/video was used interchangeably based on the students attending traditional lecture or the video based lecture. Each item was accompanied by a 5-point Likert scale, ranging from strongly disagree to strongly agree with the responses scored from 1 to 5 respectively.

STATISTICAL ANALYSIS: Nonparametric procedures were used for analyzing the data. Independent sample't' test for comparison of the two groups i.e. the traditional lecture and video assisted learning and frequency distribution (%) for the feedback. P value less than 0.05 was considered as statistically significant.

RESULTS:

Out of a total of 150 students, 146 and 143 students attended the first and second sessions respectively. The reliability of the questionnaire was proved by Cronbach's alpha coefficient (0.964). Comparison of post test scores shows a significant difference in the learning outcomes between the traditional lecture and video assisted learning (Table 1).

The score of the 10 items showed that the responses for video based lectures scored significantly higher than traditional lectures for positive items 1, 2, 5, 6,7,9. The score for items 8 and 10, though higher for video based lectures was not statistically significant. The negative items 3 and 4 showed no significant difference between the two groups (Table-2). The frequency distribution (%) of the response scores for the items in the feedback responded more favourably to video based learning than traditional lectures (Fig-1).

In the open ended questions the words used to describe traditional lectures were very good, informative , more interactive, not satisfied , not easy to remember and video lectures as more effective , motivating , enjoyable , interesting, easy to remember and more satisfactory but more preference was given to a combination of traditional lecture and video assisted learning (Fig 2).

DISCUSSION

Since a long time the main mode of teaching was through the traditional lectures. Traditional teaching tends to focus more on the details rather than its clinical relevance. Efforts are now being made to change the modes of teaching. Due to rapid advances in information and technology, it is now possible to include material that that is not available in print or make the presentation of visual text more interesting and comprehensible through video based learning, and development of skills can be better by video assisted teaching than lectures alone.

As student involvement is very important to the learning effectiveness, by integrating video assisted learning, complex topics can be made easier for the students to understand, which in turn may lead to better learning outcomes.

Nikopoulou-Smyrni et al [3] observed that teaching material based on video clips was at least as equally effective as standard teaching lectures. Similar data were collected by them during 1-, 2-, and 3-week follow-up measures. A study by El-Sayed et al [4] revealed that video-based lectures offer more successes and reduce failures in the immediate and follow-up measures as compared with the traditional method of teaching human anatomy and physiology, but these differences were not statistically significant. Amir Fayaz a et al [5] found that Instructional videotapes can aid in teaching fabrication of complete denture and are as effective as the traditional teaching system. This study has shown by the post test scores that the learning outcome with video based learning

was significantly more effective than traditional learning. The scores of the feedback questionnaire and the responses to the open ended questions by the students have shown a preference to video based learning to traditional lectures but they do not want video based lectures to completely replace traditional teaching. A blended form of learning was preferred.

CONCLUSION

Video Assisted learning helps the student in better understanding of the subject than traditional lecture. Therefore blended learning, video assisted learning along with the traditional lecture may be incorporated as part of the teaching as an institutional policy.

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Table 1 - Comparison of Post Test Scores

	NOS	Mean±SD
Lecture	**143**	**7.4±1.46**
Video	**146**	**8.05±1.41***

Data presentation as mean ±SD

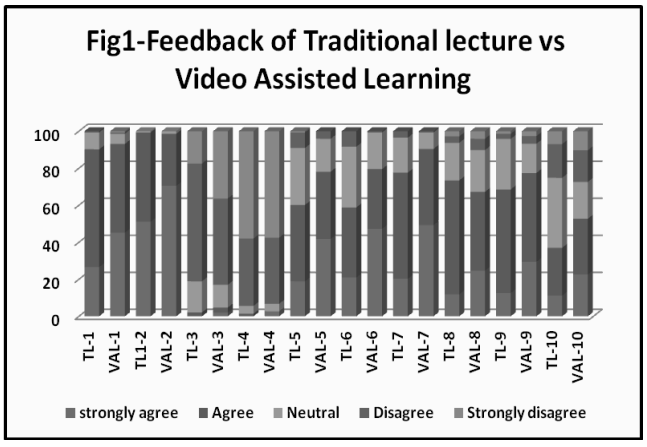
***P<0.05**

Table 2- Mean and S.D. of the items for Feedback

Items	Video	Lecture
Q1	**4.36±0.68**	**4.16±0.6 ***
Q2	**4.69±0.49**	**4.51±0.51***
Q3	**1.89±0.89**	**2.03±0.65**
Q4	**1.55±0.81**	**1.49±0.65**
Q5	**4.16±0.86**	**3.63±0.94***
Q6	**4.26±0.78**	**3.7±0.90***
Q7	**4.39±0.68**	**3.94±0.73***
Q8	**3.86±1**	**3.66±0.82**
Q9	**3.97±0.93**	**3.75±0.76***
Q10	**3.36±1.29**	**3.17±1.07**

Data presentation as mean ±SD

***P<0.05**

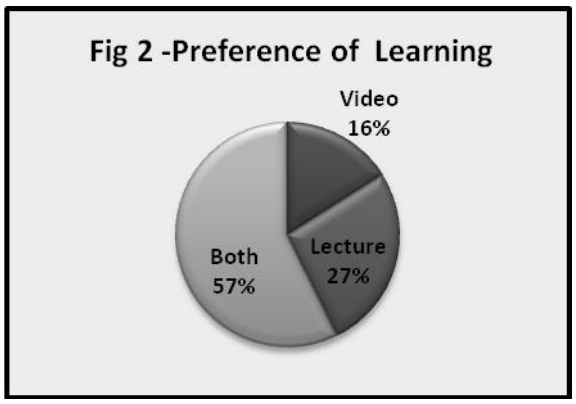


ITEMS

1. TL/VAL- helps understand the teaching material
2. TL/VAL-an essential part of learning topics
3. TL/VAL did not meet my learning needs.
4. TL/VAL- are a waste of time
5. TL/VAL- only required for the whole course
6. TL/VAL- more effective than VBL/TL .
7. TL/VAL-can retain more information than VBL/TL
8. TL/VAL- satisfied with my learning
9. TL/VAL- are enjoyable.

TL-Traditional lecture

VAL- Video Assisted learning



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