Evaluation of lectures by pre & post-test MCQS

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Abstract

Teaching is demanding and complex task. It is necessary for the present day teacher to be aware of and become part of far reaching changes that one taking place in medical education. The changes are shift from conventional role of teacher, changes in learning styles, innovative curriculum models and changes in assessment philosophy, methods and tools. Lecture method is most widely used method for large group teaching in medical colleges. There are very limited studies to establish the evaluation of lecture by pre and post-test. Hence, this experimental pilot study was undertaken to assess the effectiveness of lecture, self – learning of facilitator and student of the second MBBS students in learning pathology. Aim of the study is to encourage self – learning of medical students, to assess the facilitator lecture, to assess the understanding capacity, memory of the students

A total of eight theory classes on NEOPLASIA chapter, for eighty II year undergraduate medical student were conducted. At the beginning of each class the students were administered for pre Lecture test and post lecture test (at the end of the lecture after the lecture. Paired t-test were performed to check for the significant differences in the pre and post lecture test scores for each classes. The mean scores in the pre and post – lecture test scores for each student over the eight classes were used in analysis.

In all eight classes the mean post lecture test scores were significantly greater than the mean pre – lecture test scores. Paired t - tests was performed to check the statistical significance.

Tests incorporated into didactic lectures may be useful method not only to improve students benefit from lectures. This is also useful for self-assessment, to improve the learning abilities and teaching skills of the faculty.

Keywords: MCQS, Pre-test, Post-test, Self-assessment.

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Introduction

Teaching is demanding and complex task. It is necessary for the present day teacher to be aware of and become part of far reaching changes that one taking place in medical education. The changes are shift from conventional role of teacher, changes in learning styles, innovative curriculum models and changes in assessment philosophy, methods and tools[1].

Lecture method is most widely used method for large group teaching in medical colleges[2]. There are very limited studies to establish the evaluation of lecture by pre and post-test. Hence, this experimental pilot study was undertaken to assess the effectiveness of lecture, self – learning of facilitator and student of the second MBBS students in learning pathology.

Aims & Objectives

1. To encourage self – learning of medical students
2. To assess the facilitator (lecture delivered).
3. To assess the understanding capacity, memory of the students.

Methods

The study was conducted on second MBBS students (80 Batch) in the department of pathology, Santhiram medical college, Nandyal Kurnool. The study group of 80 students, in class room teaching were involved. The study was conducted in a eight particular days for four consecutive weeks.

In didactic lectures, one faculty member speaks to the whole class of 80 students about a particular topic for an hour, and a total of 8 theory classes were taken with the help of black board, OHP, a power point presentations.

The topic selected for teaching then was "NEOPLASIA." The students were asked to come prepared for the topic from prescribed books. The students were asked to come prepared with the then topic of discussion of that particular day. At the beginning of each class the attendance was taken, the students administered a pre – lecture test for about 5 minutes. The pre – lecture test consisted of ten single responses multiple choice questions (MCQS) prepared by another faculty. The didactic lecture then commenced with a listing of the specific learning objectives for the session. The topic was then covered with the help of the power point presentation displayed through a LCD projector. This lecture went on for forty to forty five, minutes after which post- lecture test was administered with identical questions as the pre – lecture test.

The pre and post – lecture test were designed in such a manner that they followed the learning objectives of the lecture with subject topics. To prevent any copying,

four versions of the pre and post lecture tests were distributed, such that students sitting adjacent to one another got different versions. The different versions had the same questions but in a different serial order. At the end of the eighth lecture a questionnaires was distributed to the class asking them whether they found the pre and post – lecture tests were use full (feedback). A five points Likert scale was used to elicit their responses, with higher scores indicating that they found the tests were useful. They were also asked to state the reason for their responses, suggestions and as well as to give their comments. The pre and post – lecture tests and their responses were evaluated by the same faculty member who took the classes.

Statistical Analysis

The mean and standard deviation of the pre and post lectures test scores for each of the eight classes were calculated. Paired t - tests was performed to check the statistically significant differences in the pre and post – lecture test scores for each classes. The paired t-tests were utilized to look for the means of the pre and post lecture tests scores respectively. The mean and standard deviation of the subjective scores on the Likert scale were also calculated. A 'P' value less than or equal to 0.05 was considered statistically significant.

Results

Each session with a pre – test and post-test MCQ was considered as a PAIR; In all eight pairs it was evident that the post – test scores were increased compared to pre – test scores and it was statistically significant ($p<0.05$) Table1.

Pair	Attendance	Mean +/- SD	P-value
I	56	Pre – 3.57 +/- 1.88 Post – 7.28 +/- 1.56	P<0.05
II	72	Pre – 4.18 +/- 1.31 Post – 7.94 + 1.02	P<0.05
III	66	Pre – 4.5 +/- 1.65 Post – 7.16 +/- 1.37	P<0.05
IV	72	Pre – 4.69 + 1.28 Post – 6.875 + 1.83	P<0.05
V	62	Pre – 4.16 +/- 1.92 Post – 7.5 +/- 1.48	P<0.05
VI	54	Pre – 4.12 +/- 1.75 Post – 6.74 +/- 1.64	P<0.05
VII	75	Pre – 4.8 + 1.63 Post – 6.9 +/- 1.64	P<0.05
VIII	76	Pre – 5.48 + 1.56 Post – 7.97 + 1.45	P<0.05

In all eight classes the mean post – test scores were significantly greater than the mean pre – test scores. The feedback from the students about tests whether the tests useful; the mean Likert score of the 80 students was **3.42 +/- 1.001.** This indicated that all students found the tests were beneficial. Most of the students commented that the tests helped them to focus better in classes as well as to assess how much knowledge, they gained from the lecture. Students felt that the questions were based on the learning objectives, and made them a good idea of the important aspect of the lectures majority of students felt that preparing for the class in advance, they had benefited more from the tests. The faculty felt that tests were beneficial to assess their skills and also self-assessment.

Discussion

Didactic lectures still play an important role as a method of teaching. This method of teaching has advantages and disadvantages[3]. In many countries, there has been a definite move to replace this method with more active learning methods such as problem based learning (PBL) and team based learning (TBL). Last et al 2001, prince et al 2003 documented that there is a comparable level of knowledge in students, who studied through PBL method and conventional lecture based method. However others studies have shown that students in a conventional curriculum have a significantly higher level of knowledge as compared to persons who went through a PBL curriculum.[4,5,6]

Nayak et al 2006 are of the opinion that hybrid method, incorporating feature of both methods, would be the most suitable method for teaching pathology[7]. Even though lectures are used as a method of instruction, there has been an attempt to incorporate active learning elements into it, to make it more effective.[8]

Keeping in mind the scenario in many medical universities in India. Where we recall is tested more than analytical ability and problem solving, didactic lectures skill remain the predominant method of teaching pathology to medical students.

In this study, the teacher attending the classes did not prepare the MCQS. The MCQs were prepared by another faculty. Hence the teacher was not biased about the student's performance and knowledge.

In this study, we noticed that presenting the students with the topic and analyzing them before and after the lecture classes actually improves the short – term knowledge gain. Another objective of this study was to see the performance of the students in the pre and post-test had a predictive value on their performance in the theory component of the university examination.

The other objective was the teacher must act as moderator/ facilitator and respect the views of all students opinion[9,10]. The understanding the topic checked by conducting the post – test. The results of this study showed significant improvement in the post – test mean scores compared to the pre – test mean scores (Table 1). In the present study, the teacher had the self-assessment of the lecture (and can improve the methodology of teaching and anticipatory planning and will have effective way of communication to the students.

An interest finding of the present study is that pre – lecture test scores also had a significant correlation with both post – lecture test scores. Thus it seems that students

with a higher level of baseline knowledge are likely to score better in post – lecture test, Lukic et al 2001, Krasno et al 2006 studies have who shown that students scores in formative assessments correlated well with their scores in the summative examinations[11,12].

A limitation of the present study was that long term gains, if any, from the lecture classes was not assessed.

Conclusion

Tests incorporated into didactic lectures may be useful method not only to improve students benefit from lectures but also to predict the performance in the university exam with certain limitations. It is also useful for the self-assessment of the faculty and also to use different skills for better improvement of the didactic lecture.

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