USE OF MULTIPLE RESPONSE QUESTIONS (MRQS) DURING LECTURE SESSIONS AS A TOOL TO ENHANCE LEARNING

Rosh P[1], Anoop Kumar K[2], Hemanth I. K[3]

[1]Associate Professor, Department of General Medicine, KMCT Medical College, Calicut.
[2]Assistant Professor, Department of General Medicine, KMCT Medical College, Calicut.
[3]Associate Professor, Department of General Medicine, KMCT Medical College, Calicut.

ABSTRACT

INTRODUCTION

Lecture classes are time tested solid method of teaching and have lot of advantages and few disadvantages. The main drawback is its unidirectional monotonous nature and many a time students fail to concentrate and understand especially when the sessions are long, and from the students' point of view, many are boring too. Lecture sessions are still continued because of its various advantages. There are many methods tried to improve efficacy and effectiveness of lecture sessions including reinforcement, questions and discussions. There are many studies incorporating multiple choice questions (MCQs) in lecture sessions for this purpose, with positive results. These sessions evoke creative thinking and enhance learning. For this purpose MCQs are to be prepared with care considering the areas to be covered. In order to make lecture classes more impressive, interesting and effective, we tried introducing a short multiple response session in between, along with some rewards for correct responses in terms of study materials.

AIMS AND OBJECTIVES

To study the impact of incorporation of MRQs during theory sessions to enhance the efficacy of teaching- learning process

MATERIAL AND METHODS

Study was conducted in a private medical college in Calicut. We surveyed 169 MBBS students initially with questionnaire covering various aspects of a lecture classes in general. For the next 6 months we incorporated MRQs in routine theory classes. Survey was then conducted again on the same group using same questionnaire and the results were compared. Scores were given according to performance, a maximum of 5 per question.

RESULTS

After 6 months the data showed substantial improvement in the understanding pattern of students. The average score regarding the usefulness increased from 3.57 to 3.91. After the intervention a substantial number agreed that the sessions have become more interesting, the score changed from 2.99 to 3.87. This also increased the alertness of students, the score changed from 3.17 to 3.9. The concentrating power also increased (score 3.21 to 3.9). The understanding pattern showed no change (score 3.3), but the distribution pattern changed. Most important and prominent change occurred in the interaction segment and the score steeply raised from 2.57 to 4.41.

CONCLUSION

We conclude that;
1) MRQs are powerful tools if incorporated with lecture sessions, to enhance teaching – learning process.
2) Students generally welcome an interactive session than a speech, and rewards make sessions more interesting for students.

KEYWORDS

Multiple response questions, Multiple choice questions, Teaching learning process, Lecture class.

INTRODUCTION: A lecture class is a solid method of teaching used from school level to professional education.

Lecture classes have lot of advantages and few disadvantages.[1,2] The main drawback is its unidirectional monotonous nature and many a time students fail to concentrate and understand especially when the sessions are long. The main drawback is its unidirectional monotonous nature and many a time students fail to concentrate and understand especially when the sessions are long [2,3]

Advantages of Lecture Classes:
- Facilitates large-class communication.
- Unpublished or not readily available material can be taught.
- Allows the instructor to precisely determine the aims, content, organization, pace and direction of a presentation.
- Can be used to arouse interest in a subject.
- Can complement and clarify text material.
- Some students depend upon the structure provided by highly teacher-centered methods.

Disadvantages of Lecture Classes:
- Places students in a passive rather than an active role, which hinders learning.
- Encourages one-way communication.
- Requires a considerable amount of unguided student time outside of the classroom to enable understanding and long-term retention of content.
- Different students have different pace of understanding and learning.
- Requires the instructor to have or to learn effective writing and speaking skills.

Multiple choice questions have many proven benefits and uses. They provide a wide sampling of content and objectives and are very effective evaluation tools.[4] But there are some limitations for multiple choice questions especially when they are used as evaluation tool. Multiple choice/response questions can be used as a very effective tool for enhancing the learning ability of students.[5] When it is reward linked, it becomes more student-friendly and also, interesting. Multiple response questions are probably more effective for this purpose.[6,7]

AIM AND OBJECTIVES: To incorporate a short multiple response question session during lecture sessions on a reward basis and to assess its impact on students in terms of attention span, concentration, and understanding.

MATERIAL AND METHODS: Study was conducted on MBBS students in a private Medical College attending General Medicine lecture classes. A pre intervention questionnaire was prepared and given to all students to assess the usefulness, understanding, attention, concentration, and interaction of students in lecture classes-the existing situation. Each character was given separate scores, and the average score for each question was assessed. 169 students participated in the initial survey. In the intervention phase, during every lecture session, the teacher gave few multiple response questions based on the study material he has already taught in the class (same session). Students were randomly selected to answer the questions. For each correct response, the student was rewarded with some study materials like pen, writing pads, and books which are useful for the students.

After 6 months the questionnaire was again given to students to assess the score. Of the same group, 167 participated in the second survey. Both score was compared and assessed.

Evaluation was based on 6 questions.
1. According to you how far lecture classes are useful?
2. Are the lecture sessions interesting?
3. Are you able to keep your alertness?
4. Are you able to concentrate?
5. Do you follow the classes properly?
6. Are your doubts cleared properly through interaction?

Scores:

Always	-	5
Most of the time	-	4
Sometimes	-	3
Rarely	-	2
Not at all	-	1

Scores were calculated for each question and the average value was taken as the score

RESULTS:
Analysis of Initial Data: Separate questionnaires were given to 169 students and their responses were analyzed.

Q1. According to you how far lecture classes are useful?
Of the 169 responses majority were of the opinion that lecture classes were useful most of the time (40.24%), sometimes (30.77) or always (15.38%). The average score was 3.57 (out of 5).

Response	Number	Percentage
1	03	01.78
2	20	11.83
3	52	30.77
4	68	40.24
5	26	15.38
Total	**169**	

Q2. Are the lecture sessions interesting?
Of the 169 responses 57.99% were of the opinion that classes were sometimes interesting and 18.93% each were of the opinion that most of the times or rarely interesting. The average score was only 2.99/5.

Response	Number	Percentage
1	4	02.37
2	32	18.93
3	98	57.99
4	32	18.93
5	3	01.78
Total	**169**	

Q3. Are you able to keep your alertness?

167 responded to this question with an average score of 3.17/5. Here majority (56.29) thought that only sometimes they were able to keep alertness. 25.75% thought that most of the time they were alert.

Response	Number	Percentage
1	5	02.99
2	18	10.78
3	94	56.29
4	43	25.75
5	7	04.19
Total	**167**	

Q4. Are you able to concentrate?

168 responses – 48.8% thought that they were able to concentrate only sometimes, 29.76% majority of the time and 14.88% rarely. The average score was 3.21/5

Response	Number	Percentage
1	3	01.78
2	25	14.88
3	82	48.81
4	50	29.76
5	8	04.76
Total	**168**	

Q5. Do you follow the classes properly?

169 responses with average score of 3.3. 42.01% thought that they sometimes were able to follow and 39.64% most of the time and 10.65 followed rarely.

Response	Number	Percentage
1	6	03.55
2	18	10.65
3	71	42.01
4	67	39.64
5	7	04.14
Total	**169**	

**Q6. Are your doubts cleared properly through interaction?**

Here, 61/188 that is 36.31% were of the opinion that they were rarely interacting with teachers. 25% were sometimes able to interact and 17.26% not at all interacting, 15.48% able to interact most of the time. The average score regarding interaction was only 2.57/5.

Response	Number	Percentage
1	29	17.26
2	61	36.31
3	42	25
4	26	15.48
5	10	05.95
Total	**168**	

ANALYSIS OF THE RESURVEY DATA: 167 students responded to the second questionnaire which was given at the end of 6 months (40 theory sessions).

Q1. According to you how far lecture classes are useful?

Regarding this question, 80/167 rated the usefulness as 4 and 47/167 as 5 and 19/167 as 3. Here there is a slight shift of the graph towards the right side i.e., positive response. The overall score increased to 3.91/5 from 3.57/5.
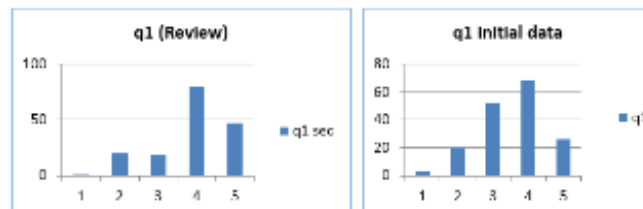
**Q2. Are the lecture sessions interesting?**

62/167 rated it as 4, 52/167 as 5 and 38/167 as 3. The average score increased to 3.87/5 compared to an initial one of 2.99/5.

The most important feature of these tracings is probably the change in distribution. Most consider their active participation makes sessions more interesting and are more refreshed by present intervention.
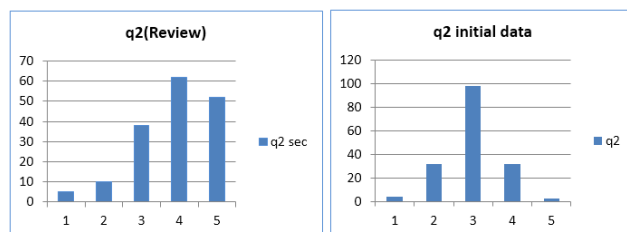

Q3. Are you able to keep your alertness?

66/167 gave rating 4, 48/167 as 5 and 44/167 as 3. Average score increased to 3.90/5. Initial score was 3.17/5. The conspicuous change in this aspect was that the substantial increase in the number of students who were able to keep alertness always.
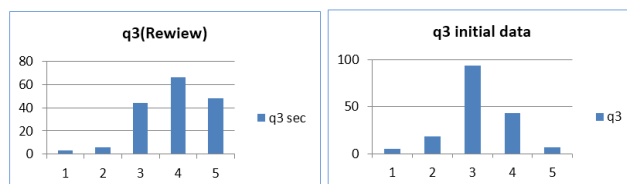

Q4. **Are you able to concentrate?**

77/167 rated as 4, 44/167 as5 and 32/167 as 3. Average score became 3.90/5. Initial score was 3.21/5. Here also the number of students who were able to concentrate always increased.
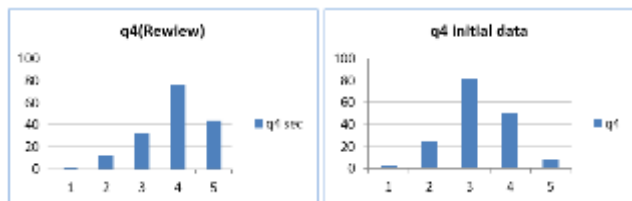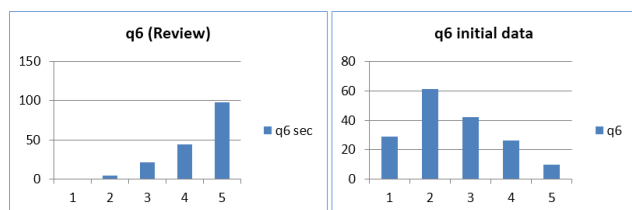
Q5. Do you follow the classes properly?

43/167 rated as 3, 40/167 as4 and 37/167 as 5. Average score 3.30/5. Initial score was 3.3/5. Here there was no change in the overall score and the distribution changed.
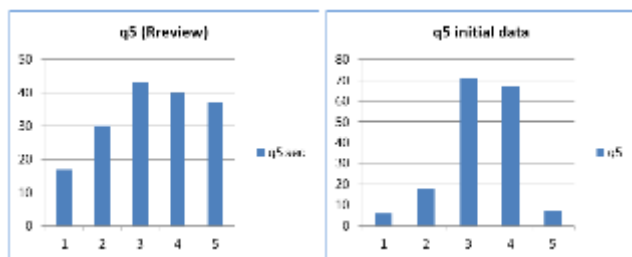
Q6. Are your doubts cleared properly through interaction?

98/167 rated as5. 44 as4 and 21as3 average score 4.41/5. The initial score was only2.57/5. Major change has happened here and the distribution totally changed. This definitely indicate that students consider interaction as a major component of teaching–learning process and as teachers we should concentrate more on the students' active participation aspect, even during a theory session and the easiest way to do this is probably incorporation of MRQs in the session.

RESULTS:

	Initial score/5	Present score/5
According to you how far lecture classes are useful?	3.57	3.91
Are the lecture sessions interesting?	2.99	3.87
Are you able to keep your alertness?	3.17	3.90
Are you able to concentrate?	3.21	3.90
Do you follow the classes properly?	3.30	3.30
Are your doubts cleared properly through interaction?	2.57	4.41

DISCUSSION: There is definitely a positive response from the students and majority is in favour of this intervention. They agree that they have become more attentive and are able to concentrate more. The score with question 5 remained same but the distribution has changed. This question is probably subject and intelligence level related and it may be the reason for such a response. Marked improvement is shown in the interaction area and majority of students welcome this.[8]Also, the sessions have become more interesting. Incorporation of MRQs is probably better than asking questions in between as it is more objective. Also students are more in favour of small incentives it terms of study materials as they are very much effective study boosters.

CONCLUSION: We conclude that MRQs are powerful tools if incorporated with lecture sessions, to enhance teaching – learning process. Students generally welcome an interactive session than a speech, and rewards make sessions more interesting for students.

REFERENCES:

1. Lecturing: Advantages and Disadvantages of the Traditional Lecture Method-CITRL network.
2. Charlton BG. Lectures are an effective teaching method because they exploit human evolved 'human nature' to improve learning - Editorial. Medical Hypotheses 2006; 67:1261-5.
3. Advantages and Disadvantages of Lectures wcer.wisc.edu/archive/cl1/CL/doingcl/advlec.htm
4. Comparative effects of test-enhanced learning and self-explanation on long-term retention DP Larsen, AC Butler, HL Roediger III - Medical education, 2013 - Wiley Online Library.
5. Multiple Choice Questions As A Teaching Learning Tool In Addition To Assessment Method Ashwini Chamanahalli Appaji*, Roopa Kulkarni**. NJIRM. 2012;3(4):91-94.
6. Using two tier reflective multiple choice questions to cater to creative thinking. HK Boo, KC Ang - 2005 - repository.nie.edu.sg
7. ACA, Kulkarni** R. Multiple Choice Questions As A Teaching Learning Tool In Addition To Assessment Method. NJIRM. 2012;3(4):91-94.
8. Bhatt M, Thapa B, Bhattacharya A. MCQ Supplementation in a Physiology Didactic Class: A Learning Tool - National Journal of. 2015 - ejmanager.com