

A study to evaluate medical student's perception on different assessment methodologies that influences the approach to learning

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Abstract

Background: Different assessment methods in educational practice influence students approach to learning. **Aim:** A study has been conducted to evaluate students perception on different assessment methodologies that included Essay and multiple choice questions and its influences on the approach to learning in a medical college. **Settings and design:** The study was conducted in the department of physiology on undergraduate first year medical students of Bhaskar Medical College, Yenkapally, Moinabad. The study was conducted on 129 Students of 150 batch as 21 students were absent. The feedback of the students on their perception was obtained after the assessment. **Materials and Methods:** The students were informed about the assessment that was planned at the end of the chapter in the introductory lecture. At the end of the topic, the students were first assessed by multiple choice questions and then by essay questions. A feedback form containing questionnaire on the students perception was given after the assessment to evaluate the perception of students regarding the assessment methodologies implemented at the end of the topic. The feedback proforma scaled according to 3 point likert scale was obtained and the data analyzed by computing as percentage. **Result:** 77.5% students perceived that the open end essay questions motivated them more to prepare for the exam compared to multiple choice question format of assessment. There is no difference in number of students agreeing that both methods are easy to prepare. 60.4% students perceived that the multiple choice question format of assessment created test anxiety during preparation compared to open end essay questions. 80.6% students perceived that the essay question format of assessment encouraged deep learning of the subject compared to multiple choice questions. 91.4% students perceived that the essay question format of assessment was assisted compared to multiple choice questions by the present course curriculum and current teaching environment. 81.3% students perceived that the multiple choice question format of assessment method has influenced their learning strategy compared to open end essay questions. **Conclusion:** Students perception for both these conventional methods of assessment do have major differences but are perceived with different advantages and disadvantages in learning process. The study of students perceptions of the assessments and its effects on the learning process used in this study should be further explored.


Keywords: Assessment, Multiple choice questions, Essay questions, Perception.

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INTRODUCTION

Understanding assessment depends on how one sees the role of the assessment itself in the educational process, as well as the role of the participants in the education and assessment processes. Research findings suggest that students' perceptions about assessment, have considerable influences on students' approaches to learning. But also vice versa, students' approaches influence the ways in which students perceive assessment. Entwistle and Tait⁴ also found evidence for the relation between students' approaches to learning and their assessment preferences. It was found that students

hold strong views about different formats and methods of assessment. For example, within conventional assessment, multiple choice format exams are seen as favorable assessment methods in comparison to essay type questions. Struyven, Dochy and Janssens¹³ interpret perceptions as a constructivist act of creating meaning in which perceptions are seen as beliefs, opinions, interpretations, ideas, preferences, images and conceptions as a result of experience. Essay Questions and Multiple Choice Questions (MCQ) both can be designed to test the cognitive skills such as knowledge and comprehension⁵ and also students perception of the assessment method that influence their approach to learning. Bridgeman B (1992) recommended that even though multiple-choice tests are less reliable due to guessing, they take less time to answer. Therefore an exam made up entirely of multiple-choice questions will contain more questions and therefore are more reliable than an exam containing fewer open-ended questions². Two categories of examination that students usually encounter in their study are MCQs and essay examinations¹². It is generally assumed that MCQs focus on knowledge recall and essay questions test the higher cognitive skills. When the content of both assessments is matched the MCQ will correlate well with the essay questions and the former can precisely predict the clinical performance⁷. The purpose of this study was to gain more insight into students' actual perceptions of assessment, and the effects of these on their approach to learning when different assessment formats are used for the same topic of study.

Settings and design

The study was designed to be conducted in the lecture hall of the department on students in the first year at Bhaskar medical college, Yenkapally, Moinabad. The feedback of the students on their perception was obtained after the assessment. The present study was done to assess two formats of conventional assessment, the multiple choice questions (MC) and the Essay question of Open end assessment method. The students were informed in the introduction lecture of the topic about the assessment that was planned at the end of the chapter. The assessment was by means of written exam in two sessions, with multiple-choice questions and essay questions respectively in each session. At the end of a topic, the students were first assessed by multiple choice questions and then by essay questions. A feedback proforma containing 6 questionnaires on the students perception was given immediately after the assessment to

evaluate the perception of students regarding the assessment methodologies implemented at the end of the topic. The feedback form scaled according to 3 point likert scale was obtained and the data analyzed using SPSS statistical software.

MATERIALS AND METHODS

The study was designed to assess 150 first year medical students. But the study was conducted on 129 Students as 21 students were absent. The traditional assessment consisted of 6 open ended questions in essay type in first session and 20 multiple choice questions in the second session. At the end of second assessment, a feedback proforma containing questionnaire pertaining to the perception of students about the assessment methodology was given. To measure the students' perceptions of the assessment methodology, the feedback form consisted of 6 questions that gain information regarding the influence of assessment method on their approach to learning.

In this study the questions asked were

1. Assessment method motivated to prepare for exam
2. Assessment method easier to prepare
3. Assessment method created test anxiety during preparation
4. Assessment method encouraged deep learning of the subject
5. The course curriculum and current teaching environment facilitated learning for this assessment method
6. Format of assessment influence learning strategy

Students were asked to complete the questionnaire directly after finishing the assessment. This questionnaire also has an acceptable internal consistency reliability (Cronbach's alpha = .73).

Analysis

The data was collected separately for the two assessment methods in excel sheet as per the scores of the likert scale and then percentages were calculated.

RESULTS

The cumulative data table consisting of the students perception of different assessment methods influencing their approach to learning is based on the 3 point likert scale that measures the perception as disagree, neutral and agree for individual question. The scale is given numbers as 1 for disagree, 2 for neutral and 3 for agree. The cumulative data table is given below:

Table 1

| Sr. No. | Students Perception | Table 1 | | | | | | | | | | | |
|---------|--|-----------------|------|-----|------|-----|------|---------------------------|------|-----|------|-----|------|
| | | Essay Questions | | | | | | Multiple Choice Questions | | | | | |
| | | 1 | | 2 | | 3 | | 1 | | 2 | | 3 | |
| No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | | |
| 1 | Assessment method motivated to prepare for exam | 20 | 15.5 | 09 | 6.9 | 100 | 77.5 | 22 | 17 | 20 | 15.5 | 87 | 67.4 |
| 2 | Assessment method easier to prepare | 30 | 23.2 | 17 | 13.1 | 82 | 63.5 | 32 | 24.8 | 15 | 11.6 | 82 | 63.5 |
| 3 | Assessment method created test anxiety during preparation | 40 | 31 | 17 | 13.1 | 72 | 55.8 | 32 | 24.8 | 19 | 14.7 | 78 | 60.4 |
| 4 | Assessment method encouraged deep learning of the subject | 13 | 10 | 12 | 9.3 | 104 | 80.6 | 45 | 34.8 | 17 | 13.1 | 67 | 51.9 |
| 5 | The course curriculum and current teaching environment facilitated learning for this assessment method | 08 | 6.2 | 03 | 2.3 | 118 | 91.4 | 60 | 46.5 | 19 | 14.7 | 50 | 38.7 |
| 6 | Format of assessment influence learning strategy | 18 | 13.9 | 14 | 10.8 | 97 | 75.1 | 12 | 9.3 | 12 | 9.3 | 105 | 81.3 |

Assessment method motivated to prepare for exam?

In the feedback obtained from students on their perception about different assessment methods they were first asked about the assessment method which motivated them to prepare for the exam in the current learning environment. The majority of the students (77.5%) perceived that the open end essay questions motivated them more to prepare for the exam compared to multiple choice question format of assessment.

Assessment method easier to prepare?

The second research question was about the assessment method which they thought to be easier to prepare in the current learning environment. There was no difference in number of students agreeing that both methods are easy to prepare.

Assessment method created test anxiety during preparation?

For the third research question, students were asked about the assessment method which created test anxiety in them during preparation in the current learning environment. The majority of the students (60.4%) perceived that the multiple choice question format of assessment created test anxiety during preparation compared to open end essay questions.

Assessment method encouraged deep learning of the subject?

For the fourth research question, students were asked about the assessment method that encouraged deep learning of the subject during preparation in the current learning environment. The majority of the students (80.6%) perceived that the essay question format of assessment encouraged deep learning of the subject compared to multiple choice questions.

The course curriculum and current teaching environment facilitated learning for this assessment method?

For the fifth research question, students were asked as to which assessment method was facilitated by the present course curriculum and current teaching environment. The majority of the students (91.4%) perceived that the essay

question format of assessment was facilitated compared to multiple choice questions by the present course curriculum and current teaching environment.

Format of assessment influence learning strategy?

For the sixth research question, students were asked about the format of assessment that influenced their learning strategy during preparation in the current learning environment. The majority of the students (81.3%) perceived that the multiple choice question format of assessment method has influenced their learning strategy compared to open end essay questions.

DISCUSSION AND CONCLUSION

Assessment is one of the defining features of the students' approaches to learning^{3,6,8}. Inappropriate assessment procedures encourage surface approaches, yet varying the assessment questions may not be enough to evoke deep approaches⁸. This study was designed to evaluate medical students perception on different assessment methodologies that influences their approach to learning. Six research questions guided this study: 1. Assessment method motivated to prepare for exam, 2. Assessment method easier to prepare, 3. Assessment method created test anxiety during preparation, 4. Assessment method encouraged deep learning of the subject, 5. The course curriculum and current teaching environment facilitated learning for this assessment method and 6. Format of assessment influence learning strategy. This study found that Essay questions assessment method not only motivated the students to prepare for the assessment but also encouraged deep learning of the subject. Multiple choice formats, or an emphasis on detailed factual answers, push students towards a surface approach, while open, essay- type questions encourage a deep approach³. Thomas and Bain¹⁴ (1984) found that the most influential feature of the learning environment is the nature of the assessment procedures. The results of their study showed clearly how a change from multiple- choice to essay- type examinations had shifted the overall tendency of the

students from a surface approach towards a deep approach. Scouller K¹⁰ found that the vast majority of students preferred the assignment essay as the method of assessing their learning and provided well-thought-out pedagogical reasons for their decision. The assignment essay was primarily valued for encouraging the development of higher order intellectual abilities and skills. The study also found that the preparation for MCQs assessment method created anxiety on more students than for the preparation of Essay Questions. The students had superficial approach while preparing for the MCQs and that this assessment method has influenced their learning strategy. There was no significant difference found among students perception of easier method for preparation for the two selected format of assessment. The present study found that the present course curriculum and current teaching environment facilitated learning for Essay Question type assessment method. Birenbaum M and Feldman RA¹ revealed that students with good knowledge skills, who have great confidence in their academic ability, tend to favor the essay type of assessment over the multiple-choice questionnaire. It has been argued by Scouller¹¹ that a mismatch in the perception of assessment leads to poorer assessment results. The outcomes of that study were found to be strongly associated with students' general orientations towards study. To conclude students perception for both these conventional methods of assessment do have major differences but are perceived with different advantages and disadvantages for both these methods. The study of students perceptions of the assessments and its effects on the learning process used in this study should be further explored and conducted in a larger scale and after conducting students orientation programme to generate awareness of the research.

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