

Original Research Article

Comparison of the outcome of structured essay versus unstructured essay questions used as assessment tool in pathology

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Abstract

Background: Construction of a question is a very important step in setting up of a question paper in written assessment of students during II M.B.B.S course. The most important aspect of this assessment is framing the question paper. At present long essay type of questions is one of the methods to assess cognitive skills in examinations. The two major categories of assessment are structured and unstructured questions, each of which serves different purposes to draw inferences about a subject's capability.

Objectives: To evaluate II year M.B.B.S students in answering structured essay question versus unstructured essay question and to compare and assess reliability of the structured essay question in Pathology examinations.

Materials and methods: Present study was conducted in Gandhi Medical College, for a batch of 205 students i.e. II year students before University examinations. Students were initially tested with unstructured essay question, and then same group of students subsequently tested after one week with structured essay. Marks were tabulated and analyzed. Mean difference in the score of each answer was calculated by Chi square test.

Results: A total of 205 students were evaluated for formative assessment by giving two different types of essay questions in Pathology in pre final examinations. 47.8% of students with unstructured essay question evaluation scored less than 10 marks (74.63%) and only 15.61% of students scored 16 and above marks in this group. In structured essay question evaluation (second phase) had higher percentage of student who scored more than 10 marks (73.17%). More than 38% of students scored 16 and above marks in this group.

Conclusion: In this repeated measures study, students administered with structured essay method scored significantly better marks than the unstructured essay method, suggesting a need for introducing structured essay method for better evaluation of students in the examination.

Key words

Structured essay question, Unstructured essay question, Comparison, Pathology.

Introduction

Construction of a question is a very important step in setting up of a question paper in written assessment of students during II M.B.B.S course. Written assessment is usual method of conducting the formative assessment. The most important aspect of this assessment is framing the question paper. At present long essay type of questions is one of the widely used method to assess cognitive skills in internal assessment as well as University examinations. The two major categories of assessment are structured and unstructured questions, each of which serves different purposes to draw inferences about a subject's capability. There are two major purposes for using essay questions that address different learning outcomes. Our purpose is to assess students understanding of subject matter content. The other purpose is to assess students writing abilities. Essay questions provide an effective way of assessing complex learning outcomes that cannot be assessed by other commonly used assessment procedures [1-4].

Objectives

- To evaluate II year M.B.B.S. students in answering structured essay question versus unstructured essay question.
- To compare and assess reliability of the structured essay question in Pathology examinations.

Materials and methods

Present study was conducted in Gandhi Medical College, Secunderabad for a batch of 205 students i.e. II Year M.B.B.S. students before University examinations. Institutional ethical committee approval was taken prior to the study. Oral and written consent was obtained from all

the students. Students were initially tested with unstructured essay given by Head of the Department of Pathology, which were assessed by second professor in the same department. Then same group of students subsequently tested after one week with structured essay question given by Head of the Department and assessed by same professor independently. Marks were tabulated and analyzed. Mean difference in the score of each answer was calculated by Chi square test.

Results and Discussion

A total of 205 students were evaluated for formative assessment by giving two different types of essay questions in Pathology in pre final examinations. Initially these students were given unstructured essay question and the marks obtained by each student were analyzed. Then same group of students were asked to answer the same question after one week without prior information but this time given in structured format, the answer booklets were corrected by professor and the marks were analyzed.

Statistical analysis

R programming language (version 3.0.1) was used for statistical analysis. Frequencies, Cumulative Frequencies and crosstabs were computed for various groups of marks and compared using chi-square test. P value less than 0.05 was considered significant.

47.8% of students with unstructured essay question evaluation scored less than 10 marks (74.63%) and only 15.61% of students scored 16 and above marks in this group (**Table – 1**).

In structured essay question evaluation (second phase) had higher percentage of student who

scored more than 10 marks (73.17%). More than 38% of students scored 16 and above marks in this group (**Table – 2**).

Table – 1: Descriptive statistics of results of unstructured essay question evaluation.

Marks	No. of students	%	Cumulative %
0-5	55	26.83	26.83
6-10	98	47.80	74.63
11-15	20	9.76	84.39
16-20	32	15.61	100.00
All	205	100.00	

Table – 2: Descriptive statistics of results of structured essay question evaluation.

Marks	No. of students	%	Cumulative %
0-5	23	11.22	11.22
6-10	32	15.61	26.83
11-15	72	35.12	61.95
16-20	78	38.05	100.00
All	205	100.00	

When both the phases were compared using chi-square test, there was a significant differences ($P < 0.001$) in the marks scored by both the groups (**Table – 3**).

Table – 3: Comparison of structured and unstructured essay question results using chi-square test ($X^2 = 95.26$, degree of freedom = 3).

Marks	No. of students (Structured)	No. of students (Unstructured)	P value
0-5	23 (11.22)	55 (26.83)	<0.001
6-10	32 (15.61)	98 (47.80)	
11-15	72 (35.12)	20 (9.76)	
16-20	78 (38.05)	32 (15.61)	
All	205 (100.00)	205 (100.00)	

There was an increasing no of students with higher marks in the structured essay question method than the unstructured essay method as per **Figure – 1**. Increasing percentage of students with higher marks in the structured essay question method than the unstructured essay method was as per **Figure - 1**. While a higher percentage (48%) of students scored 6-10 marks in the unstructured question method phase, higher percentage (38%) students in the structured question method had 16 and more marks.

According to our study, the students were comfortable in answering structured essay question when compared to unstructured essay question. So based on this evaluation it is clearly understood that the students were more comfortable in answering structured essay question where we assess the answer by dividing marks for each bit of question, so that students will answer more appropriately than the unstructured question.

The best assessments are thoughtfully developed to best measure the applicable skills and content. The choice of question type is very important especially in pathology to assess the knowledge of students more effectively and reliably. Structured questions will cover most of the syllabus and at the same time valuation is easy and time saving when compared to unstructured question.

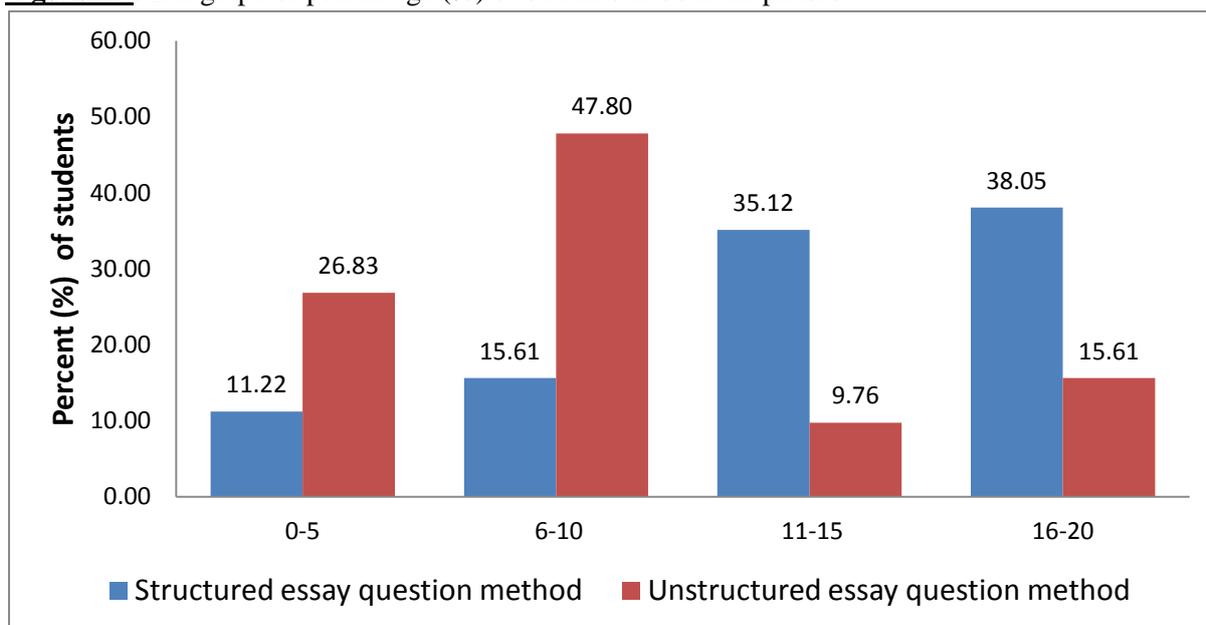
Conclusion

In this repeated measures study, students administered with structured essay method scored significantly better marks than the unstructured essay method, suggesting a need for introducing structured essay method for better evaluation of students in the examination.

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Figure – 1: Bar graph of percentage (%) of students in both the phases.



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