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STUDENTS PREFERENCE FOR VARIOUS TYPES OF ASSESSMENTS IN ANATOMY EXAMINATION

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ARTICLE INFO	ABSTRACT
	Background: The use of variety of different assessment methods has been characteristics of medical education. The aims of this study were to determine the students preference for various types of assessments that form the second MB, BS examination in Anatomy and to know if there is any correlation between these methods. **Methods**: Performance of 242 students in second MB, BS examination was considered for this study. Four difference assessments were employed; The Essay consists of 5 questions of 20 marks each, Multiple choice questions consist of 100 questions of one mark each, Practical examinations has 50 stations, students rotate from specimen to specimen and are given one minute to answer each question. Oral is directed by the external examiner. The result obtained was analyzed using SPSS version 17. **Results**: The mean scores for MCQ, Practical, Essay and Oral were 40%, 48%, 47% and 51% respectively. Those who scored <50% in MCQs, practical, essay and oral were; 81.41%, 44.63%, 59.92% and 26.86% respectively. It showed that the students scored maximum mark (80%) in oral followed by essay (74%), practical (72%) and MCQ (68%) in that order. Lowest marks were scored in oral and practical (10%).There was strong positive correlations among the various types of assessments. **Conclusion**: The students performed best in oral followed by practical, essay and MCQs in that order. The four components of the assessment correlated strongly. This combination of variety of assessment help to minimize the short comings of each one of them and help to bring objectivity to the grading system. Hence multidimensional assessment helps to evaluate the various skills of the students and the objectives of medical education and produce physicians that are both skilled and knowledgeable.

INTRODUCTION

Assessment has long played a central role in medical education at all levels of training. It is the primary mechanism by which both institutions (Universities and Hospitals) can assure the public of acceptance level of competence among the trainees and practitioners (Glenn Regehr *et al*., 2011). From an educational perception, it is seen as primary mechanism for providing feedback to the trainees for the purpose of improving performance. Epstein and Hundert (2002) stated that medical schools conduct assessments to certify the competence of future doctors, provide motivation and direction for learning and judge the adequacy of training programs. With the recommendation of the Medical and Dental council of Nigeria, second MB, BS examination is a professional examination used to assess medical and dental

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students in Nigeria and it is taken at the end of their preclinical classes (end of third year). The use of variety of different assessment methods has been characteristics of medical education (John *et al*., 2006). In Anatomy, four varieties of assessment methods were employed; Essay questions composed of long and short essay types. Multiple choice questions (MCQs) that are organized in different forms with options. The practical examinations in the form of steeplechase where structures are tagged or pinned and students were expected to identify the structure and or answer a question about it (Eric *et al*., 2013). Finally, the oral examinations (VIVA VOCE), where the students sit one on one with a team of examiners to answer question in any aspect of Anatomy. The aims of this study were; to know students preference for various types of assessment that form the second MB,BS examination in Anatomy, to know if there is any correlation between these various types of assessments.

MATERIALS AND METHODS

The performance of two hundred and forty two (242) students who appeared for their second MB, BS examination was considered for this study. The essay consists of five questions of 20 marks each and students are expected to attempt all questions within three hours. The multiple choice questions consist of 100 questions of one mark each; 50 stem questions with options, 30 matching questions and 20 TRUE or FALSE questions with duration of 75 minutes. There was negative marking in the 20 True or False questions. In the practical examinations, structures were tagged or pinned and students were expected to identify the structure and answer a question about it. Practical exam questions are evenly divided among soft tissues, osteological structures and histological slides. Students rotate from specimen to specimen and are given one minute to answer each question. Oral was directed by the external examiners with duration of 10 minutes per student. Each of the essay questions were marked independently by two lecturers who finally reconciled their scores after marking. Conference marking method was used for the MCQ and practical questions while the external examiner scored the oral. The result obtained was statistically analyzed using SPSS version 17.

RESULTS

Table 1, shows distribution of medical students according to marks scored in the various types of questions. The mean scores for MCQ, Practical, Essay and Oral were 40%, 48%, 47% and 51% respectively.

Table 1. Distribution of Medical students according to marks scored in various types of questions

Percentage of mark obtained	Multiple choice question	Practical	Essay	Oral
0-9	0	0	0	0
10 - 19	1	6	1	1
20 - 29	38	13	13	7
30 - 39	81	34	52	17
40 - 49	77	55	79	40
50 - 59	39	92	60	99
60 - 69	6	40	35	65
70 - 79	0	2	2	11
80 - 89	0	0	0	2
90 -100	0	0	0	0
Mean:50	x=40	x=48	x=47	x=51

summary

	MCQ in%	Practical in%	Essay in%	Oral in%
Poor (<50%)	81.41	44.63	59.92	26.86
Fair/good(50-59%)	16.12	38.02	24.79	40.91
very good (60-69%)	2.48	16.53	14.46	26.86
Excellent (70%>)	0	0.83	0.83	5.37

None of the students scored less than 10% or more than 80% in any of the assessment methods. The analysis revealed that 81.41% of the students scored poorly (less than 50%) in MCQ and none scored up to 70%. In the practical and essay questions, 44.63% and 59.92% of the students scored less than 50% while only 0.83 % of the students scored up to 70 marks in both of them. There was comparatively better performance in oral questions. Table 2 shows the correlation coefficient among the various types of questions. There were strong

positive correlations among the various types of assessments and this was strongest between essay and practical, followed by essay and MCQ, practical and MCQ, essay and oral, practical and oral, MCQ and oral in that order. Table 3 is a descriptive study showing the highest and lowest marks scored in the various types of questions by the students. It showed that the students scored maximum mark (80%) in oral followed by essay practical and oral in that order. lowest marks were scored in oral and practical (10%)

Table 2. Correlations among the various types of questions

	MCQs	Practical	Essay	Oral
MCQs	1	.646(**)	.729(**)	.543(**)
practical	.646(**)	1	.736(**)	.591(**)
Essay	.729(**)	.736(**)	1	.638(**)
Oral	.543(**)	.591(**)	.638(**)	1

**Correlation is significant at the 0.01 level (2-tailed).

Table 3. Scores obtained by students in various types of questions. Descriptive Statistics

	Minimum %	Maximum %	Mean±SD
MCQs	18	68	40±10.06
Practical	10	72	48±12.17
Essay	19	74	47±10.96
Oral	10	80	51±11.70

DISCUSSION

Examinations form an integral part of any learning activity and proper assessment of acquired knowledge reflects the students ability to learn and also gives feedback to teachers who in turn modify the pattern of evaluation as per requirement. The nature of assessment is known to influence the learning behaviour and attitude of students (Anand *et al*., 1998). In this assessment study, the mean scores in MCQs was 40%, and 81% of the students scored poorly (<50%) though many of the students scored between 30 and 49%. The poor performance in MCQs may be attributed to the fact that the question span through every aspect of Anatomy and the pressure associated with it been the first examination to be taken. Another factor was the negative marking of the "TRUE" or "FALSE" section of the question. MCQs examination is an important aspect of medical examination because it assesses a very wide scope and therefore is said to be valid, reliable and objective (Nilam *et al*., 2011). More students performed better in essay questions compared to the MCQs and many of the students that performed poorly were within 40 and 49%.

Maximum mark scored was 74% implying that many of the students had basic cognitive learning and written communication skill which is reflected in essay questions. Essay writing gives the student an opportunity to put forth the ideas before the teacher in a proper manner and help to judge the depth of knowledge but width of knowledge was poorly assessed (Newble *et al*., 1983) however, this was taken care of by the nature of the MCQs. This is obvious considering the fact that only five questions cannot adequately cover the whole Anatomy. The relative poor performance in the essay and MCQs may be due to the obvious pressure and tension associated with the volume of work to cover and also on the fact both examinations were taken on the same day. The practical examination was taken about one week after the essay and MCQs during which the candidates try to reorganize

themselves to make up the deficiencies that may have occurred during the essay examination. This obviously resulted to the good performance in the practical exam where more than half of the candidates scored well and with 0.83% scoring excellently. It also reflects the power of visual learning ability. Oral examinations have been used as a performer based assessment method for medical examination (Kshirsaga *et al*., 2011). The primary benefit is that it allows the examiner to probe the candidate's understanding of Anatomy as well as clinical reasoning (Petrosa *et al*., 2002). The study showed that more than 70% of the students did very well in oral examination with 5% scoring excellently. Again the oral exam was the last segment of the assessments taken some days after the practical exams hence affording the candidates some ample opportunity to make up past mistakes at less pressure. The oral examination is perceived to be a more valid measure of a candidate's intellectual competence than the MCQs (Norman *et al*., 2011, Muzzin 1995). The flexibility of the oral examination gives the examiner the unique opportunity to explore the depth of knowledge and understanding of the student.

With reference to table 2 (Pearson correlation coefficient), there was good correlation among the various types of assessments. It was also observed that good students performed very well in the four components while weak students performed poorly. It is generally accepted that different methods of assessment have the greatest effect on study strategy (Entwistle 1981). Hence, this type of combination of various types of questions help the students to score marks and perform better. Evaluation of learning experience has to include all the four types of assessments. Students have a preferred learning style but adapts their way of learning to the concept of what is required of them (Harden *et al*., 1979). This type of questions were found to suit all type of students and also their scope to identify and differentiate a good and a weak student.

Conclusion

The study has presented the assessment of second MB,BS candidates in University of Nigeria, Enugu campus. The students performed best in oral followed by practical, essay and MCQs in that order. There was strong positive correlation among the four components of the assessment. These combination of variety of assessment help to minimize the short comings of each one of them and help to bring objectivity to the grading system. Hence multidimensional assessment helps to evaluate the various skills of the students and the objectives of medical education and produce physicians that are both skilled and knowledgeable.

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