

ORIGINAL RESEARCH

‘Theory Question-Answer’ OR ‘Reflection Writing’ - who can supplement the AETCOM skill assessment effectively?- a study in Phase 1 MBBS Anatomy students

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ABSTRACT

Rationale: AETCOM teaching of the NMC module 1.5 “cadaver as our first teacher” is traditionally taught to the Phase 1 students at the very beginning of their Anatomy course with the event of lecture followed by cadaveric oath-ceremony. NMC has mandated to include the 5-marks short note on AETCOM on theory assessment. But nowhere has mentioned the mandatory reflection writing by the learners. Earlier studies put question marks on the ability of theory question to predict the AETCOM skill, but evidence lacking. So his work has been undertaken to compare the correlation of theory score and reflection essay grade with the practical score of AETCOM assessment. **Methodology:** After the AETCOM class Phase 1 students were asked to submit their reflection essay within one month time. Those essays were graded according to their strength. Students’ theory-score in AETCOM question was collected from departmental record. Students’ practical assessment score in AETCOM were also collected from departmental record. Those cognitive parameters were correlated with the practical score. **Result-Analysis:** It was observed that reflection-essay grades bear significant correlation with the practical score ($p < 0.05$) but the theory score not ($p > 0.05$). **Discussion- Conclusion:** Hence it could be postulated that the 5-marks theory question in internal assessment exams is not at all flawless to assess AETCOM skill of a student; rather it would be better if reflective practices could be imbibed amongst the learners.

Key words: Anatomy Education Teaching Curriculum Outcome Model, Affective domain assessment, Directly Observed Non-Clinical Skill (DONCS)

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INTRODUCTION

‘Assessment drives learning’^[1,2] the phrase repeatedly has been proved that unless there is proper assessment, there would not be and learning by the learner. AETCOM (Attitude-Ethics-Communication) is present days one of the emphasizing concern where every medical learner is being taught following and abiding by the NMC-AETCOM module (Teaching module for Attitude Ethics Communication implemented by National Medical Commission of India)^[3] from very first year of their MBBS graduation. In Anatomy, module no. 1.5 “cadaver as

our first teacher” is being taught almost in every medical colleges since a decade or more.^[4-7]

Traditionally, as mandated by NMC, in each internal assessment examinations a written question gets put on this module like “*explain- cadaver is your first teacher*” on five (5) marks in theory paper, and students’ score in this, is accepted as their expertise in the skill to show respect to cadaver in proper way. Although NMC puts certain guideline in the higher phases of MBBS for how to include AETCOM in practical assessment; but such guideline has not been mentioned for Anatomy in Phase 1 MBBS^[8,9]. There

is gross lacking of mandatory directives of reflective practices.

As mentioned in Roy H, Rawekar A, Ray K (2025)^[10] in their article that even almost all departments from preclinics to clinics are asked to teach & assess AETCOM effectively, but still after 06 years of its practice, somewhere faculties are neither confident nor maintain the assessment of AETCOM and just gets limited on 5-marks theory question only.

Zayapragassarazan Z, Kumar S, Kadambari D in 2019, have reviewed the records of feedback of 200 participant faculties of subsequent nine (9) ATCOM sensitization programmes and documented that according to them learning of AETCOM was more preferred in self-directed learning mode rather than the didactic lecture. Moreover it also came out that assessment would to be standardized and for the sustainability of the ATCOM module, it would to be fostered by the administration.^[11]

In 2021, Ghosh A, Bir Ain their work explored that faculties' non-adherence in faith of reliability of the so-called theory assessment of AETCOM [12]; which was later on supported by students' view as was explored by Ganguly B, D Souza R, Nunes R (2022) in their work.^[13]

Mentionable that the students opined that AETCOM to be assessed in both formative and summative examinations, but they opined the OSCE as the tool. So, there remains a vacancy of either a practical skill assessment of AETCOM or a more powerful tool of cognitive domain to which can predict students' ability of AETCOM.

Shapiro J, Kasman D, Shafer A in 2006 and later Dhaliwal U, Singh S, Singh N. (2017) vividly described the role of the reflective writing in augmentation of skills on professionalism & empathy; which was also supported in the work of Jain S, Mahajan N, Prajapat R et al. in their work at 2022, where they conveyed that almost all the three domains can be assessed by reflective writing.^[14-16]

But practice of reflective writing in Phase 1 MBBS students whether gets more authenticated to assess AETCOM skill, or, the NMC mandated 5-marks theory question serves the purpose- such comparison was not been found in literature till searched for.

Research Question

Whether the 5-marks theory QA correlates more to the assessment of AETCOM skill over the reflective writing?

Objective

1. To correlate the (a) reflection-essay grades & (b) theory scores with the practical score achieved in AETCOM assessment.

MATERIALS & METHODS

- **Place of study:** The study was carried on in the Department of Anatomy of a government medical college of Kolkata.

- **Study design:** Descriptive mixed method longitudinal study
- **Study period:** 12 months.
- **Period required for data collection:** 08 months
- **Sampling frame:** Learners of Phase I MBBS
- **Sampling technique:** departmental records belonging to all the learners (200) were accessed and studied.
- **Sample size:** records of all 200 learners were accessed.

- **Study tool:**

Departmental records of-

- a) Reflection essays as submitted by learners after the AETCOM session
- b) Theory score capture sheet- to capture marks of 1st, 2nd, 3rd IA exams
- c) Practical score in particular station in 3rd IA exam

- **Making & validating the tool:** This project was a part of the MHPE course of SHER, DMIMS (DU) Wardha. Approval already granted from there to conduct the work. Approval has also been obtained from Institutional Ethics committee (No. IPGME&R/IEC/2024/0031 dt. 08.02.2024) from the place of work.

1. Theory score capture sheet was framed, to collect the theory score of individual learners for the AETCOM question in all three Internal Assessment Exams.
2. Gradation scoring of the reflection essays were done after consulting the MEU/CC members of own institute & other neighboring institutes. [Fig. 1- Reflection essay gradation score]
3. Practical exam checkpoint sheet was prepared and was presented before the faculties of the Anatomy department of own as well as other institutes and their opinion was gathered for its content. MEU/CC members of the own institute was also approached for their opinion regarding its structuring and accordingly finalized. [Fig 2.- AETCOM practical station]

- **Statistics:**

For descriptive analysis the mean, median, mode, frequencies, ranges, standard deviations were calculated using SPSS (version 12) software. Each of the reflection-essay was graded by single observer using the gradation-guide [Fig. 1]. The Correlation analysis done also by using SPSS software.

RESULT ANALYSIS

Data of 200 participants (all Phase 1 Anatomy students) were analysed. The reflection essays were scored according to the gradation-guide, and found almost 75% students could narrate the reflection in proper way- they have mentioned all the three segments (What happened? So what? What next?) and mentioned their self-realization with the future plan. Only one student could mention it in well narrated

way. The gradation average was 3.76 +/- 0.48. [Figure 3, 4]

Roll-wise achievement of marks in AETCOM theory questions have explored that almost all of the students could score between 3 to 4 out of full marks 5 (60-80%) in the theory examination. [Fig 5- theory score]. On analyzing the score of practical assessment part it was found that their score varied from 04 to 09 (40-

90%) out of full marks 10 with mean of 7.21 ± 1.18) [Fig 6- practical score]. Students' practical score was found to have significant correlation with the reflection essay grade score, but have no significant correlation at all with the theory marks achieved by the student. [Table 1]

Reflection essay gradation score	
formulated and validated by MEU/CC members of same & other institutes	
Variable	Reflection essay gradation score
Scoring of the Quality of written essays in reflection-	Grade 1: No segmental structuring
The reflection essays were categorized in	Grade 2: segmental structuring present, but only narrated the event
linear scale based upon its quality and matter.	Grade 3: segmental structuring, narration, self-realization.
The categorization was done by the subjective perception.	Grade 4: segmental structuring, narration, self-realization & future plan
Grade 1: minimum score	Grade 5: segmental structuring, minute details in narration,
Grade 5: maximum score	well narrated self- realization, well narrated future planning

Figure 1- Reflection essay gradation score

Station 10**Task:**

One of your friend was absent in the demonstration class when your teacher has demonstrated the Femoral triangle on the cadaver yesterday. Now in the tiffin hours of today, your friend has approached you to help him. You are to demonstrate the boundaries of the femoral triangle in the cadaver placed before you to your friend. Go forward and demonstrate him.

Observer's checklist

			Roll 1	Roll 2	Roll 3	Roll 4
1	The student should wear gloves properly	0.5				
2	The student should take the non-toothed forceps	0.5				
3	The student would disrobe the cadaver passionately	1				
4	The student should disrobe in such a manner, so that genitalia and other parts not gets exposed.	1				
5	The cloth, after disrobing will not get wrinkled	1				
6	The cloth will not get damaged by any means	1				
7	The student should remove the cotton plug cautiously so that it not gets stained	1				
8	The student should not tear any structure and handle them passionately	1				
9	After study, the student should cover the area with cotton and cloth fluid stored in the DH	1				
10	The student will robe the area with the cloth	1				
11	The student should leave the area peacefully.	1				

Figure 2- AETCOM practical Exam station task card & checklist

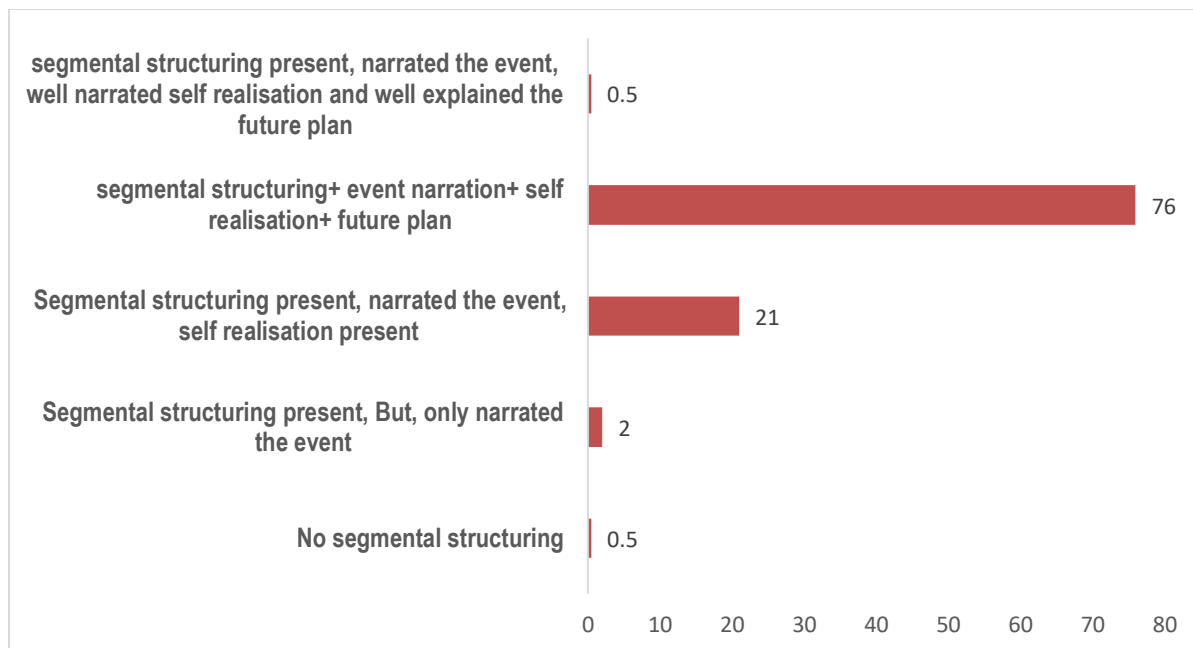


Figure 3- Bar diagram showing the gradation of reflection essays as submitted by the students after one-month of the AETCOM class (figures in the bar, represents percentage) [N=200]

Inference: 76% of students were able to write reflection by mentioning the event, self-realization and their future action plan. Only 0.5% could narrate it in detail. Similarly 0.5% could not write the reflection essay in proper format.

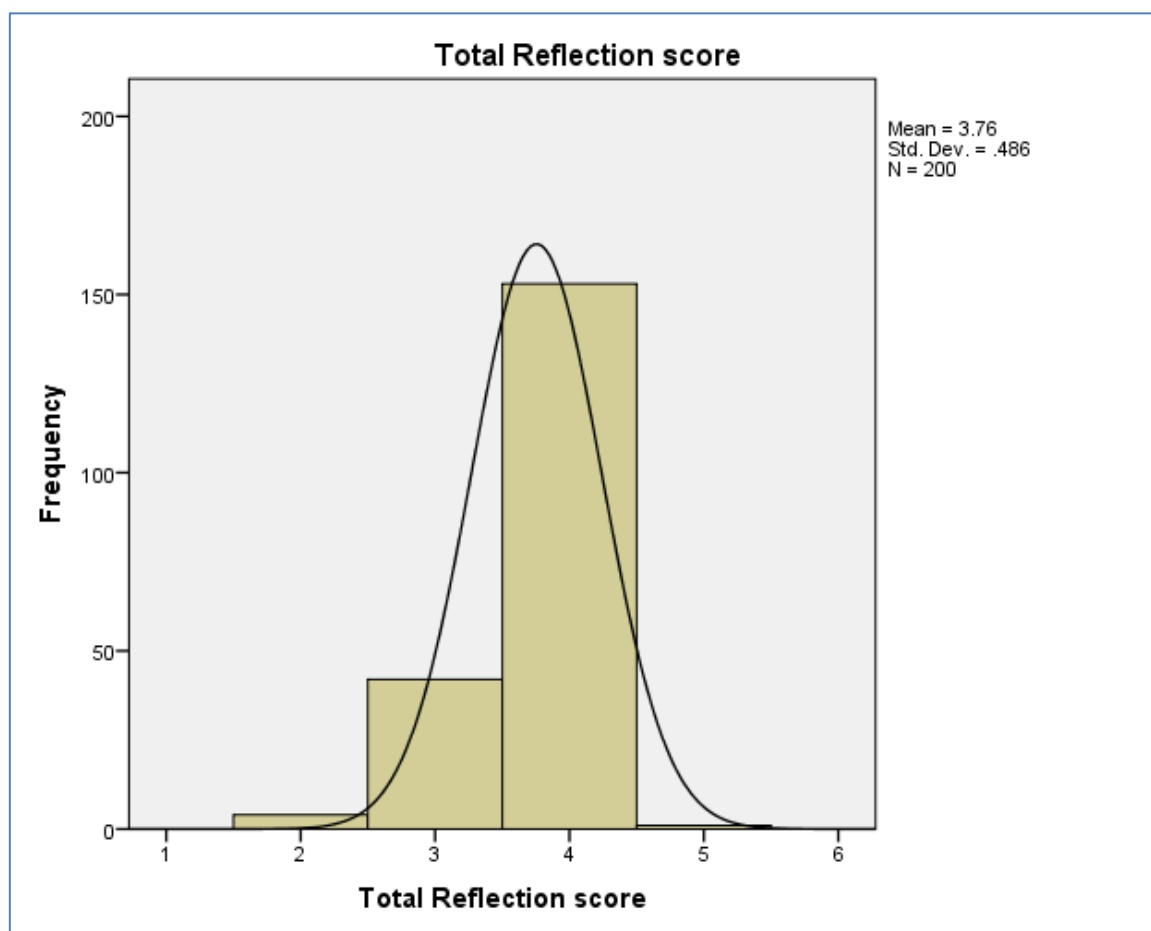


Figure 4: Histogram representing the frequency distribution of the reflection essays

Inference: The reflections essays were scored following the gradation-guide. Mean score was found 3.76+/- 0.486 out of maximum score 05

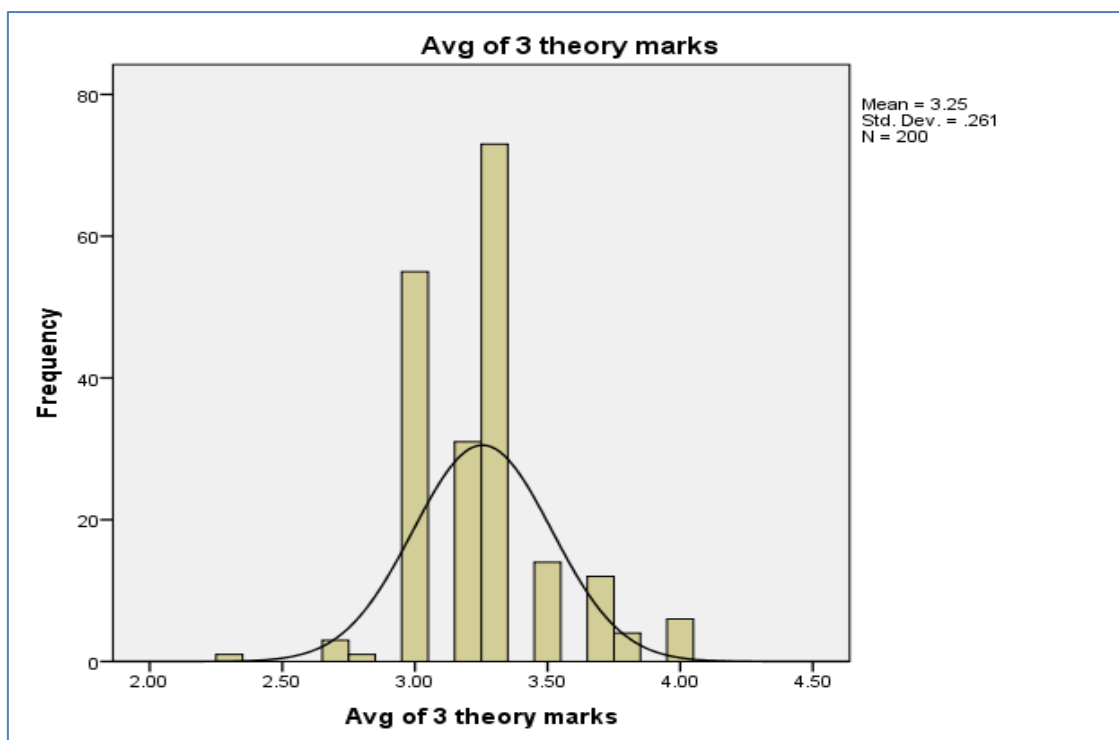


Figure 5: Histogram representing the frequency distribution of the Roll wise average of the AETCOM Theory question in internal assessment exam (mean 3.25 +/-0.261).

Inference: The average of the marks obtained by each students in all three IA exams in the AETCOM question part were calculated to be with avg. of 3.25+/- 0.261 out of full marks 05. Almost all the students have scored between 60-80% marks.

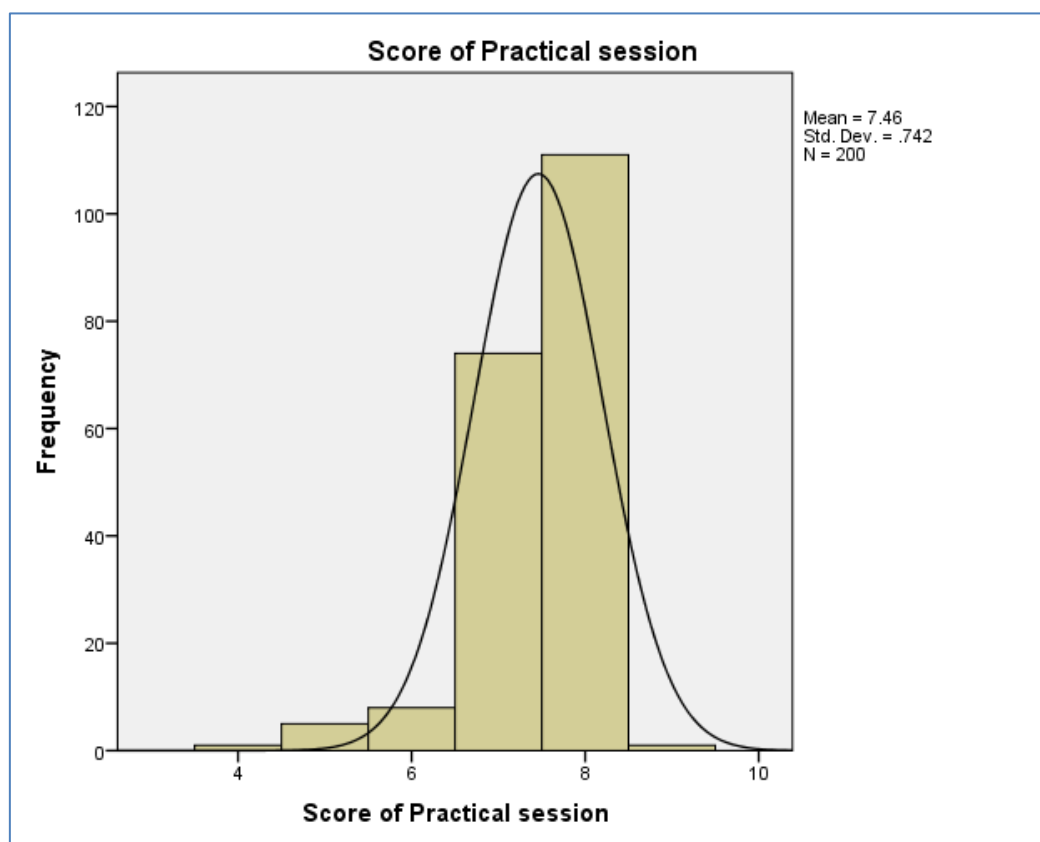


Figure 6: Histogram representing the frequency distribution of the students according to their practical-score obtained in AETCOM practical assessment.

Inference: The marks obtained by each students in AETCOM practical exam were calculated to be with avg. of 7.46+/- 0.742 out of full marks 10. It was observed that students have scored between 4 to 9 (40% to 90%) out of full marks 10.

Table 1: Correlation analysis of the practical score with (a) reflection grade & (b) theory score; achieved by individual student

		Total Reflection score	Avg of 3 theory marks
Score of Practical session	Pearson Correlation	0.439	0.152
	Sig. (2-tailed)	0.000	0.031
	N	200	200

Inference: the score achieved in Practical exam, significantly correlates with the grades of reflection essays (p=0.000), but have no significant correlation with the theory score achieved by the students (p=0.031)

DISCUSSION

Usually the teaching of AETCOM Module 1.5 “cadaver as our first teacher” gets conducted in very beginning of Anatomy classes in two phases- one hour lecture session followed by ‘cadaveric oath ceremony’. Since 2016, this cadaveric oath ceremony has been incorporated in Anatomy Education Teaching Curriculum Outcome Model (AETCOM of Anatomy) in different institutes worldwide.^[1-7] Assessment of AETCOM is usually done by the NMC mandated 5-marks short note type question^[8-9] in the theory exam in Anatomy. Till date no other directive has been formulated in-print neither by NMC nor by the university, so far is the Anatomy curriculum concerned. Different studies earlier^[14-19] have put question on the AETCOM skill assessment by the theory question-answer write-up especially in such descriptive mode. Obviously students get victim of the subjective evaluation in such mode. There are earlier studies where efficiency of reflection writing has been discussed, but without any evidence of correlation with AETCOM practical assessment especially in Anatomy curriculum.

So in this study it had been proved that the reflection-writing is more significantly correlated with the AETCOM skill achievement rather than the simple descriptive short notes.

Strength of this work can be mentioned as-

- All 200 students’ data were analysed. There was no drop out
- First time AETCOM skill in Anatomy got assessed in practical assessment format.
- Reflection-writing has been proved more significantly correlated with AETCOM skill of a student.

CONCLUSION

As the proverb ‘assessment drives learning’ says, no learning is completed unless it is assessed for. So, in Anatomy, when the module “cadaver as our first teacher” is being taught with aim that students would learn how to put respect to cadaver, assessment of such becomes essential. Theory QA in descriptive short-note format was proved not at all efficient to assess a students’ AETCOM skill, rather the

reflection-writing habit can be. So, in-stead of that 5-marks short note on AETCOM may be replaced with the periodical reflection-writing if faculties would wish to assess students’ AETCOM in cognitive mode.

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