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Method, types and frequency of formative assessment in competency learning: Student view

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Abstract---Background: Formative evaluation is a range of formal assessment employed by professors during the teaching process in order to modify curriculum activities, to improve student attainment. Since the implementation of Competency Based Medical Education students need to adopt a deep learning approach contrary to traditional learning. We were interested to get their views about formative assessment. Objective: To explore perception of number and types of formative assessment by phase 1 students. Methods: To collect data from a pre validated questionnaire from Phase 1 MBBS students of 3 medical colleges and analyze it, regarding the formative evaluation. Results: 43 to 71 percent felt that frequency of formative assessment was optimal. 61 to 67 percent felt that quantity of portions for the formative assessment tests was optimal. 57 to 72 percent felt that formative assessment motivated them to study regularly. 58 to 67 percent of students feel that the level of difficulty of

the questions was optimal. 59 to 66 percent of students feel that periodic formative assessment tests improved their learning of the pre-clinical subjects. Conclusions: Formative assessment helps them in learning as well as preparing for summative assessment. Formative assessment helps in keeping them motivated to study regularly.

Keywords---formative assessment, phase 1 MBBS students, GIMSR, GITAM.

Introduction

The conventional academic curriculum assesses the MBBS students on summative tests that overall gives judgment about the competence and the qualification to proceed to the next level of responsibility. [1] In this the progress of the students learning could not be assessed. Formative assessments focus on the learning and improvement of the learner by providing them opportunities to recognize their weakness and enables teachers to identify areas where students need support. The New Castle University and Durham University follow progressive assessment of three essential domains i.e. Skill, Knowledge and Professionalism. [2] The highlight of formative assessment is providing timely feedback on performance and suggestions for improvement that intend to enhance student's learning. [3] Paper based formative assessments, though it is cost effective and feasible, it has many limitations i.e. students gathering, invigilation and individualized feedback, all this needs dedicated time and manpower. [4] Online assessment using google forms, small group teaching and evaluation in the form of real time explanation provided by students and immediate rectification by faculty, knowledge, skill and professional domain was done. We wanted to know how students perceived these formative assessments in all the primary subjects of Phase 1 MBBS. Accordingly data was collected from three colleges and analyzed

Materials and Methods

A pre-validated questionnaire was prepared and given to the student through Google forms (11 closed ended & 2 open ended) and the data was collected from Phase 1 M.B.B.S students as per LIKERTS SCALE . Data is analyzed by using SPSS V25. Descriptive statistics will be represented with percentages. Chi-square test is applied based on nature of the distribution. $P < 0.05$ will be considered as statistically significant.

Inclusion Criteria

Students who attended 80% of formative assessment with 75% attendance in regular class both theory & practical classes.

Results

In my study results showed that government medical college students fared better than the private medical college students in the following aspect i.e.

Preparedness for formative assessment, Adjust to time of formative assessment by preclinical department, Manage to attend regular classes and also formative assessment, Frequency of formative assessment, Portion given for formative assessment, Getting feedback from the teacher, Motivation to study regularly, Quality of question given to them in formative assessment was good, Learning of preclinical subjects, were in good health

Apart from this what students liked the most of conducting formative assessment was

Post test discussion, Correlation of preclinical knowledge with clinical scenario & applied aspect, Useful for summative assessment in time adjustment and also for effective recall, Helped them to study regularly, Suggestion given to improve formative assessment, Timely feedback through post test discussion, Prior intimation of time and syllabus content to students, Include application based question, Inter department coordination so that all formative assessment do not fall on neardates, Conduct formative assessment in a strict manner.

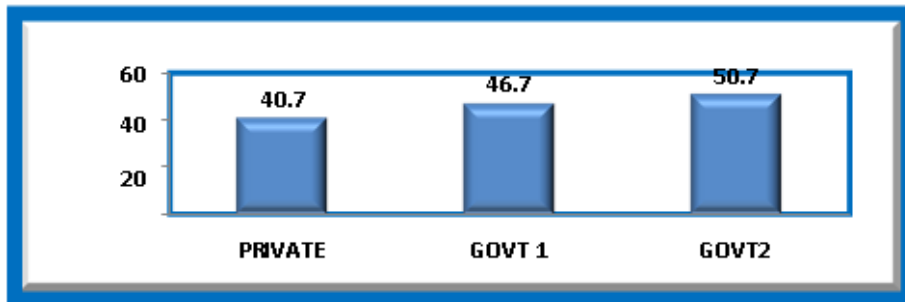


Fig 1. Percentage of students prepared for formative assessment

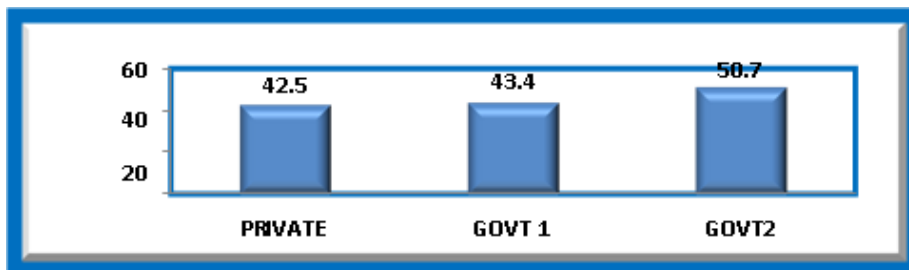


Fig 2. Percentage of students able to adjust timing of formative assessment tests conducted by the pre-clinical departments

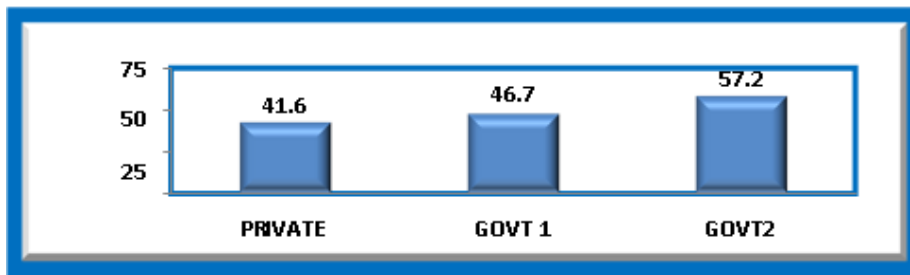


Fig 3. Percentage of students manage studying for and attending the formative assessment tests as well as attending regular classes

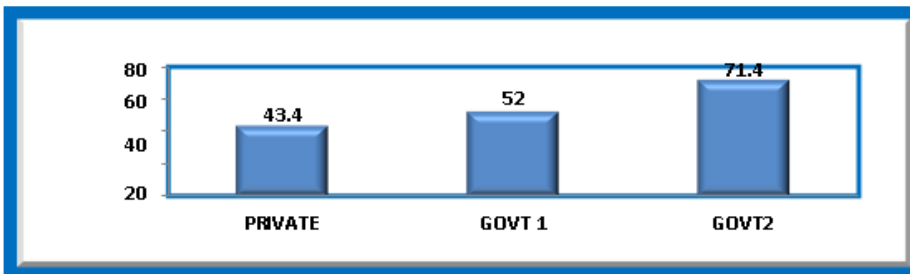


Fig 4. Percentage of students feeling frequency of formative assessment tests was optimal

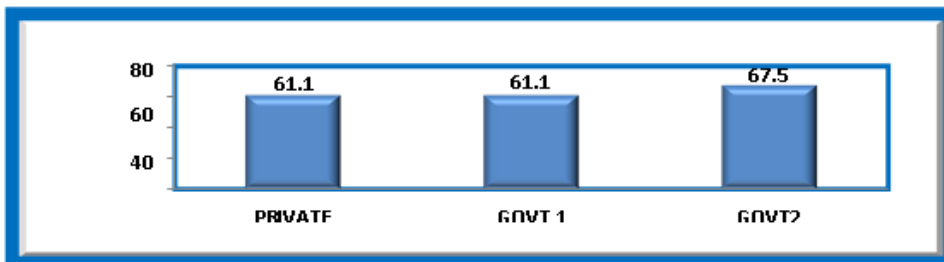


Fig 5. Percentage of students feels that quantity of portions for the formative assessment tests was optimal

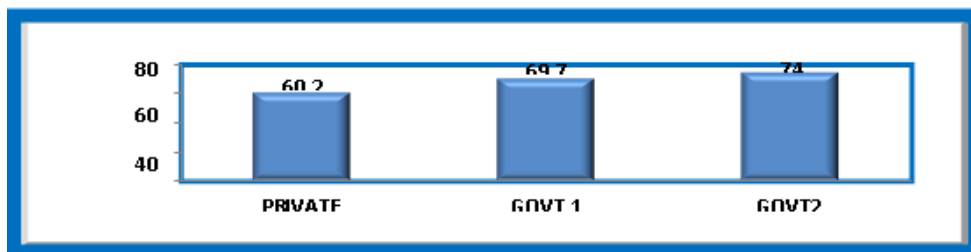


Fig 6. Percentage of student's feels that formative assessment tests provided me with valuable feedback in areas of improvement

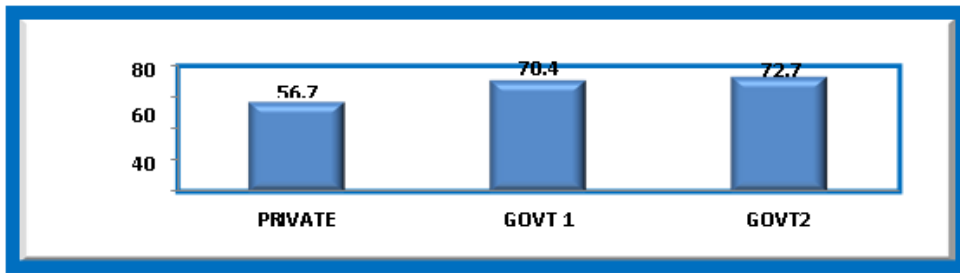


Fig 7. Percentages of students feel that formative assessment motivated them to study regularly

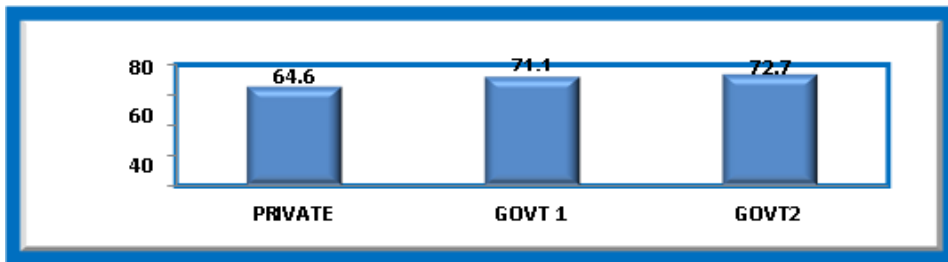


Fig 8. Percentages of students feel that quality of the questions used in formative assessment tests was good

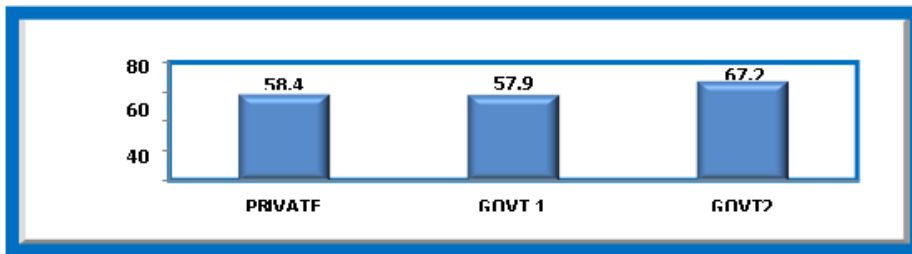


Fig 9. Percentages of students feel that the level of difficulty of the questions was optimal

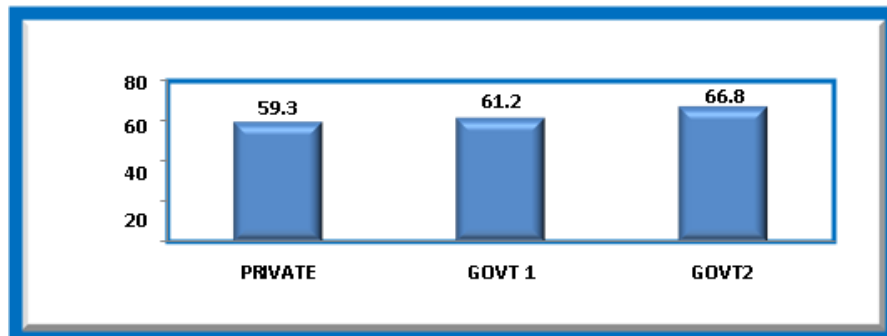


Fig 10. Percentages of students feel that periodic formative assessment tests improved my learning of the pre-clinical subjects

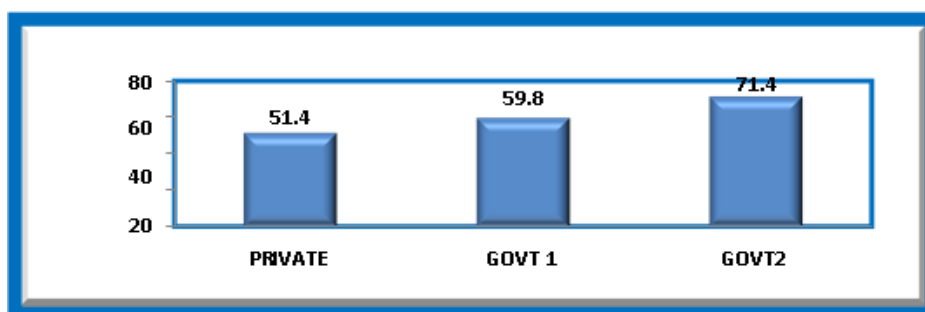


Fig 11. Percentage of students in good health to attend all the formative assessment tests

Table 1
Various parameters in formative assessment of PVT,GOVT1,GOVT2

	PVT	GOVT1	GOVT2	P-value
PREPARATION OF FORMATIVE ASSESSMENT	40.7	46.7	50.7	0.361
ADJUST TIMING OF FORMATIVE ASSESMENT	42.5	43.4	50.7	0.448
MANAGE FORMATIVE ASSESSMENT AND REGULAR STUDY	41.6	46.7	57.2	0.079
FREQUENCY OF FORMATIVE ASSESSMENT WAS OPTIMAL	43.4	52	71.4	0.001*
QUANTITY OF PORTION FOR FORMATIVE ASSESSMENT WAS OPTIMAL	61.1	61.1	67.5	0.556
FORMATIVE ASSESSMENT PROVIDED VALUABLE FEEDBACK	60.2	69.7	74	0.101
FORMATIVE ASSESSMENT MOTIVATED THEM TO STUDY REGULARLY	56.7	70.4	72.7	0.035*
QUALITY OF QUESTION IN FORMATIVE ASSESSMENT WERE GOOD	64.6	71.1	72.7	0.0001*
LEVEL OF DIFFICULTY OF FORMATIVE ASSESSMENT WAS OPTIMAL	58.4	57.9	67.2	0.311
PERIODIC FORMATIVE ASSESSMENT IMPROVED LEARNING OF PRECLINICAL SUBJECTS	59.3	61.2	66.8	0.525
STUDENTS IN GOOD HEALTH TO ATTEND FORMATIVE ASSESSMENT	51.4	59.8	71.4	0.0145*

Discussion

Assessment, both formative and summative, is an important part of medical education. It is generally acknowledged that assessment drives learning; however, assessment can have both intended and unintended consequences (Schuwirth and Van der Vleuten, 2004) [5]. However it is now widely accepted that the students orient their learning in relation to what they are assessed [6]. Engaging in Formative Assessment with a genuine impact on learning is complex and quite a challenge to both students and Teachers [7]. The purpose of assessment is understood to be to test what students have learnt [8].

The goal of formative assessment is facilitation and consolidation of learning rather than grading the students. Assessment is not only essential for grading the performance of students, but it is also an important tool that drives learning. [9] Students perceive the use of multiple-choice quizzes, true/false quizzes, matching quizzes, gap filling quizzes, e-portfolio, peer assessment, wikis, weekly assignments, offline assignments, essay types assignments, reflection, and databasetype assignments as effective tools of formative assessment in online learning settings [10]. The students felt MCQs better reflected their study efforts while SAQs were a more accurate reflection of what they had learnt:” but short answers really do reflect what I know, I think.[11]

In my study 46.03 (40.7 private & 46.7 and 50.7 govt) percent of students were prepared for formative assessment. 62.43 (59.3 private & 61.2 and 66.8 govt) percent of students feel that periodic formative assessment tests improved my learning of the pre-clinical subjects. It correlates with study done by Masood Anwar, Fahd Mudassar Hameed [12], where they found that the percentage ranged from 60% to 80%. 66 % (56.7 private & 70.4 and 72.7 govt) opined that formative assessment helped them to study regularly. It was less than the findings of study done by Jaime Labarca, Catalina Figueroa, Bárbara Huidobro, Ana Cecilia Wright, Arnoldo Riquelme & Rodrigo Moreno [13] where they found that the percentage ranged from 90% 70.5% percent of students feel that formative assessment tests provided them with valuable feedback. It correlates with the findings of the study done by Julian C Archer [14]

Conclusion

Formative assessment with well designed constructive feedback and proper and timely remedial measures promote learning of students, identify their weakness and address it for the student to achieve better academic outcome.

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