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Designing Internal Assessment Plan for medical undergraduates: Practical guidelines

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Abstract

Since adopting a new competency-based curriculum for medical undergraduates, formulating the plans for assessing the students has become cumbersome. Current guidelines emphasize more towards formative assessment rather than summative. In this paper, we have tried to develop a simp assessment plan for evaluating students in two subjects taught in different phases, i.e., Pathology and Surgery. This model involved both formative and summative assessment methods to improve the reliability and validity of assessment. We have tried to evaluate each and every competency pertaining to different domains. Equal weightage is provided to both the theory and clinical part. Due to its continuous nature, multiple tools are used to evaluate clinical skills like mini-cex, osce, short and long cases.

Key-words: Internal assessments, competency-based curriculum, feedback, GMER.

Introduction

Graduate Medical Education Regulation (GMER) 2019 has elaborated the basic principles and broader guidelines to conduct Internal assessments for MBBS Students. The detailed planning has been left to the institution, which led to different interpretations and many variations in the IA pattern. Most colleges struggle to make a good Internal Assessment plan encompassing all the points mentioned in the GMER documents. Through this article, we have tried to make concerted efforts to develop a simple format for Internal assessment, which may easily be implemented in medical colleges. This will help minimize the variations and provide an opportunity to assess maximum competencies using standardized methods.

What is an Internal Assessment?

There is no standard definition of Internal Assessment in the literature, but it is mainly considered an examination without external control. Another way to define it is 'the assessment conducted by the teachers who have taught the subject.' Broadly, we can label an assessment as an internal assessment if it has the following components:

- Conducted by the teachers who were involved in teaching the particular subject.
- Should be continuous / throughout the course.
- Should provide feedback.
- Should contribute to providing the marks/ grades for the final pass and fail decision.

IA: Formative Vs. Summative

The debate is still on whether IA is Formative or Summative. Contemporary thinking blurs the boundary between summative and formative assessment [1]. Wijnen also prompted that an assessment can be used both for providing feedback and for giving final pass-fail decisions [2]. Internal assessment has both components of feedback, as well as the inclusion of marks with a

bearing on the pass-fail decision. So, one can easily say that Internal assessment is a combination of Formative and Summative assessment.

Utility / Strengths of Internal Assessment (IA)

Feedback: Feedback is recognized as the single most effective tool to promote learning (Hattie, 1987) [3]. It is an inherent component of Internal assessment and allows the identification of a learner's needs so that timely remedial measures can be taken. [4]

A wider sampling of competencies: Varied skills, including skills of the affective domain, can easily be tested, which are otherwise difficult to test during the final or summative examination.

Assessment of process of learning: Due to the longitudinal nature of internal assessment, it is easier to monitor and improve the process of learning.

The biggest strength of IA is that it has components of Both Formative and Summative Assessment, thus minimizing the limitations and adding the benefits of both types of assessment. We know that no single assessment tool is best; it must be the combination of different tools to improve the reliability and validity of the evaluation. Similarly, an assessment having both components, formative as well as summative, can be more beneficial for the learner.

Challenges in designing the IA

Faculty Training: Faculty development plays a significant role in designing and implementing the assessment plan. Lack of faculty training is the main reason for poor implementation, lack of transparency, and inappropriate feedback [5].

The exploitation of Assessment: As this assessment is without external control, the chances of misusing the power are always there [6].

Poor Concept of IA*:* Most faculty members still use internal assessments as summative assessments without providing feedback. Sometimes, it is considered as the miniature form of the final examination. Weightage has not been given uniformly to different assessments.

S**cope of IA:** It is usually impossible to cover all the domains in one or two assessments, especially the summative assessment. However, due to its continuous nature, the assessors have ample time to test competencies in different domains.

Cognitive Domain (Knowledge): can be tested through written examination, Viva-voce, or case-based discussion.

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Psychomotor Domain (Practical/clinical skills): at the end of every lab or clinical posting, the procedural skills like preparation of slides, putting an IV cannula, catheterization, and many others which otherwise are difficult to conduct during the summative examination.

Affective Domain (Behavioural skills): Communication skills, Professionalism, academic honesty, attitude, and interpersonal skills can be tested through Punctuality, attendance record, participation in group discussions, seminars, community projects, research projects, Case presentations, and many others.

Excerpts from GMER 2019 based on which IA is to be planned (7)
Scheduling of Exam

- ✓ Regular periodic examinations shall be conducted throughout the course.
- ✓ When subjects are taught in more than one phase, the internal assessment must be done in each phase and must contribute proportionately to the final assessment.
- ✓ There shall be no less than three internal assessment examinations in each Preclinical / Para-clinical subject and no less than two examinations in each clinical subject in a professional year.
- ✓ One of the three tests in preclinical and para-clinical subjects should be a prelim or pre-university examination.
- ✓ One of the tests in Ophthalmology, Otorhinolaryngology /Forensic Medicine & Toxicology/ Community Medicine should be a prelim or pre-university examination during Phase III part I
- ✓ One of the tests in General Medicine, General Surgery, Pediatrics, and Obstetrics and gynaecology should be a preliminary or pre-university examination during phase III part II.

Components of IA

- ✓ ECE assessment should be included subject-wise in all Preclinical subjects.
- ✓ There should be at least one short question from AETCOM in each subject.
- ✓ Assessment of electives to be included in IA of final phase subjects (? As a separate head)
- ✓ Day to day records and log book (including required skill certifications) should be given importance in internal assessment.
- ✓ The final internal assessment in a broad clinical specialty (e.g., Surgery and Medicine) shall comprise marks from all the constituent specialties. The proportion of the marks for each constituent specialty shall be determined by the time of instruction allotted to each.

General Guidelines

- ✓ The internal assessment marks for each subject will be out of 100 for theory and out of 100 for practical/clinical (except in General Medicine, General Surgery, and Obstetrics and Gynaecology, in which theory and clinical will be 200 marks each).
- ✓ Learners must secure at least 50% marks of the total marks (combined in theory and practical/clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in a particular subject to be eligible for appearing at the final University examination of that subject.
- ✓ Internal assessment marks will reflect as a separate head of passing at the summative examination and will not be added to the University marks.
- ✓ The results of IA should be displayed on the notice board within 1-2 weeks of the test.

Keeping in mind the above guidelines, we have developed an Internal assessment for two departments as an example. Department of Pathology, a second phase subject, and Department of Surgery, which runs in three phases (Phase II, Phase III Part 1, and Phase III Part 2)

Internal Assessment Plan for the Department of Pathology

- Total marks 200 (Theory- 100, Practical – 100)

- Each assessment will carry 100 marks, which will then be reduced as per the weightage of each internal assessment for the final calculation of IA.

Table 1: Internal Assessment plan for the Department of Pathology

Exam	Time	Theory	Practical	Total
IA 1	16th week	30 marks	30 marks (OSCE+ VIVA-VOCE)	60 marks
IA 2	32nd week	30 marks	30 marks (OSCE+VIVAVOCE)	60 marks
IA 3 (SENT UP)	Last week of teaching schedule	40marks	40 marks (30+10 marks for log books)	80 marks
Total		100 marks	100 marks	200 marks

Internal Assessment Plan for Surgery and Allied Departments

- Total marks 400 (Theory- 200, Practical – 200)
- 25% marks reserved for allied surgical specialties- 20% (80 marks) for Orthopaedics and 5% (20 marks) for Radiology, Anaesthesia, and Dental)
- Phase-wise distribution of marks (Weightage proportionate to the syllabus covered)
- Phase II - 50 marks
- Phase III part 1 - 80 marks
- Phase III part 2 - 150 marks
- Sent Up Examination - 120 marks.

Table 2: Internal Assessment Plan for Surgery and Allied Departments

	Assessment	Time	Marks Surgery and Allied					Total marks THEORY	Total marks PRACTICAL
			Surgery	Anesthesia	Dental	Radio	Ortho		
Phase II (12 months duration)									
Theory	1st Assessment	25th Week	15					30	
	2nd Assessment	49th Week	15						

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Practical	Mini-CEX	End of 4 Weeks Posting	20						20
TOTAL			**50**					**50**	
Phase III Part 1 (13 months duration)									
Theory	3rd Assessment	26th Week	15				5	40	
	4th Assessment	52nd Week	15				5		
Practical	**OSCE**	End of 4-week posting	20	10 (End of 2 weeks posting)			**10**		40
TOTAL			**50**	**10**			**20**	**80**	
Phase III part 2 (13 months duration)									
Theory	5th Assessment	20th Week	20	5			10	70	
	6thAssessment	40th Week	20		5		10		
Practical	Bedside Long + short cases	End of 8-week posting	40						80
	Bedside Long case	End of 4-week posting	20				15+5 (logbook)		
TOTAL			**100**	**10**			**40**	**150**	
SENT UP EXAM									
	Sent Up Theory	Last week of teaching schedule	50				10	60	
	Sent Up Practical		50 (40 + 10) {10 marks for log books}				10		60
Sent Up Total			100				20	120	
Grand total			**300**	**20**			**80**	**400 (200+200)**	

Written Assessment (Theory)

Total Marks for each paper -50 will be reduced per the weightage given to each phase.

Duration 2hrs

Tools for written Assessment:

MCQs – 20% (10 questions of 1 mark each)

SAQs – 20% (5 questions of 2 marks each)

Short Notes – 40% (5 questions of 4 marks each, one question each on AETCOM in Phase II, Phase III parts 1&2)

Essay type – 20% (1 question of 10 marks)

Clinical Assessment

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Tools for Clinical Assessment: Mini-CEX, OSCE, Bedside long and short cases

Weightage is given to the domains during clinical Assessment in all phases.

Table 3: Weightage of Different Domains During Clinical Assessment

S. No.	Domains	Weightage
1	Knowledge	40%
2	Skills	30%
3	Communication	20%
4	Professionalism	10%
	Grand Total	**100**

Internal assessment planning and conduction should involve all the teachers of the Department. This will not only take care of subjectivity but also provide much-needed training in assessment to junior faculty members and residents. As per the quarter model suggested by Dr. Tejinder Singh, no teacher should contribute more than 25% of total marks, and no single assessment tool should contribute more than 25% of the marks. [f] based on this, we have also suggested different assessment tools even for clinical examination (end of posting exam). Different tools may be used depending on the expertise and resources available in different colleges. Similarly, a written examination should have a mix of MCQs, SAQs, LAQs, and Assertion reasoning questions.

The use of multiple methods by multiple examiners in multiple settings to assess multiple competencies, blueprinting, and longitudinal assessment help to improve the reliability and validity of the assessment.

Remedial measures

As per 2019 GMER regulations, Colleges should formulate their own policies per their universities' directions for remedial measures for students who are either unable to score qualifying marks or have missed some assessments.

An internal assessment improvement exam may be conducted one or two weeks before sending the final internal assessment to the University. This can be done as OSCE for practical examination and a written knowledge-based paper for the theoretical assessment.

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