Inside the black box-formative assessment in medical education

Medical teachers have been given responsibility of producing competent doctors. In a sense, they are the angels, who safe-guard the health and well-being of millions of our population. First step in safeguarding patient safety is the implementation of high-quality medical training and rigorous assessment methods. The decision to permit a person to practice medicine should not and cannot be taken lightly as it has enormous consequences for the health and safety of patients who may seek the services of this person at a later date. However, what goes on in the name of training and in examinations during the medical course is pretty appalling, to say the least.

The medical college classroom is a black box. If we are bothered about declining standards of medical education or we are interested to raise the standards of education, then we need to look into this black box.

Certain *inputs* from the outside -- pupils, teachers, other resources, management rules and requirements, parental anxieties, standards, tests with high stakes, and so on -- are fed into the box. Some *outputs* are supposed to follow: pupils who are more knowledgeable and competent, better test results, teachers who are reasonably satisfied, and so on.

But, what is happening inside the box? How can anyone be sure that a particular set of new inputs will produce better outputs if we don't at least study what happens inside? And why is it that most of the reform initiatives are not aimed at giving direct help and support to the work of teachers in classrooms?

Learning is driven by what teachers and pupils do in classrooms. Teachers have to manage complicated and demanding situations, channelling the personal, emotional, and social pressures of a group of youngsters in order to help them learn immediately and become better learners in the future. Standards can be raised only if teachers can tackle this task more effectively

Standards are raised only by changes which are put into direct effect by teachers and pupils in classrooms. There is a body of firm evidence that formative assessment is an essential feature of classroom work and that development of it can raise standards.

If we think of our students as plants…

Summative assessment of the plants is the process of simply measuring them. It might be interesting to compare and analyze measurements but, in themselves, these do not affect the growth of the plants.

Formative assessment, on the other hand, is the equivalent of feeding, watering and cropping the plants appropriate to their needs - directly affecting their growth.

An examination that attempts to test students' mastery at a given point of time is less preferable than one that tests the mastery over a span of time.

Any teaching learning activity which allows us to be observed/ measured and provides information that can be used for providing constructive feedback to both teacher and learner can be a tool for FA, like -

1. Classroom participation
2 Participation/contributions during tutorials
3. Participation/contributions during group discussions
4. Class assignments
5. Quizzes
6. Seminars
7. Clinical case presentations
8. Practicals
9. Home assignments
10. Short term research projects

There are also a large number of online tools available for formative assessment–check out some of these from the NWEA blog:

Example;

- Kahoot - A game-based classroom response system, where teachers can create quizzes using Internet content.

The recent guidelines of Medical Council of India (MCI) on Graduate Medical education have placed a lot of emphasis on internal assessment (IA) as a formative assessment.

IA happens during the course, feedback to students is possible to large extent, and is done at frequent intervals.

There is no acceptable model of internal assessment in our country. Each institution, in fact each department within an institution, is following its own method. Even the MCI has stopped short of providing any operational recommendations on the issue, in effect transferring the onus to the teachers concerned. It is imperative that a uniform and acceptable model of internal assessment is developed

The strengths of internal assessment (IA) are threefold:

One, there is an opportunity to provide timely corrective feedback to students. Feedback is recognized as the single-most effective tool to promote learning.

Two, IA can be designed to test a range of competencies, such as, skill in performing routine clinical procedures (giving injections, suturing wounds, performing intubation etc.), professionalism, ethics, communication, and interpersonal skills, which are hardly assessed in the final examinations.

Three, the continuous nature of this assessment throughout the training period has the potential to steer the students' learning in the desired direction over time. The focus is on the process, as much as on the final product of learning.

Problems with Internal Assessment in India

Despite its obvious strengths, internal assessment has not been used to its full potential in India. Often trivialized as a replica of the final examination, IA is restricted only to theory and practical tests, while its potential to test other competencies is seldom exploited. The major issues with internal assessment in India are:

Improper implementations: Institutions were left to design their own plan of IA leading to considerable variation in the methods of assessment and the competencies assessed. Practical guidelines have not been provided for implementation of IA in the 2012 revised regulations on GME either, giving rise to a sense of *déjà vu*.

Lack of faculty training: Lack of training is often the reason for poor implementation, lack of transparency, and inadequate or no provision of feedback to students. By not providing timely and appropriate feedback, the biggest strength of internal assessment is nullified.

Misuse/Abuse: IA is often misused as an examination without external controls. The 2012 draft regulations have proposed some variations from the 1997 regulations. Marks of IA are no longer to be added to the final scores. Although not expressly stated, fear of abuse of IA to inflate marks seems to have prompted this change. However, this opens new opportunities to use IA to assess competencies hitherto left un-assessed.

Lack of acceptability: The issues that lower the acceptability of IA from all its stakeholders are: variability in marking by institutions, too much 'power' bestowed to single individuals (often departmental heads), too much weightage to single tests and a perceived lack of reliability.

When properly implemented, IA scores over the year-end examination in terms of its validity, reliability (consistency of performance), feasibility and educational impact. To ensure that students are not denied the benefit of this extremely useful modality, efforts need to be made to improve its implementation and acceptability.

To overcome Subjectivity associated with formative assessment, here is a proposed quarter model of IA -

Quarter model of IA:

- At least one assessment every quarter,
- No teacher contributing more than 25%,
- No tool contributing more than 25%
- No assessment contributing more than 25% to the total marks in internal assessment.
- *Format*: Passing separately in IA and summative assessment, in both theory and practical/clinical components should be mandatory
- *Organization and Conduct*: To allow greater spread of marks, each subject may be assessed out of a maximum of 100 marks (50% for theory and 50% for practical/clinical component) in the IA. IA should make use of a number of assessment tools
- Four assessments with a mix of essays, SAQs, MCQs and oral examinations can be utilized.

FA not only will change us as a teacher but we believe it will change the students as learners.

- We used to do a lot of explaining, but now let us do questioning…
- We used to do a lot talking, but now let us do a lot listening…
- We used to think about teaching the curriculum, but now let us think about teaching the student…

References

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