

Formative assessment in undergraduate medical education: concept, implementation and hurdles

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Abstract

Formative assessment, described as "the process of appraising, judging or evaluating students' work or performance and using this to shape and improve students' competence", is generally missing from medical schools of Pakistan.

Progressive institutions conduct "formative assessment" as a fleeting part of the curriculum by using various methods that may or may not include feedback to learners.

The most important factor in the success of formative assessment is the quality of feedback, shown to have the maximum impact on student accomplishment.

Inclusion of formative assessment into the curriculum and its implementation will require the following:

- * Enabling Environment
- * Faculty and student Training
- * Role of Department of Medical Education (DME)

Many issues can be predicted that may jeopardize the effectiveness of formative assessment including faculty resistance, lack of motivation from students and faculty and paucity of commitment from the top administration.

For improvement in medical education in Pakistan, we need to develop a system considered worthy by national and international standards. This paper will give an overview of formative assessment, its implications and recommendations for implementation in medical institutes of Pakistan.

Keywords: Formative assessment, Education, Pakistan.

Introduction

The face of medical education in Pakistan is changing. The incremental steps being taken to be at par with global advancements in Health Professions Education need to be acknowledged. The governing and accreditation bodies such as Pakistan Medical & Dental Council (PMDC) and Higher Education Commission (HEC) have encouraged integration of curriculum and allowed medical colleges to take progressive steps within the scaffolding provided under their patronage.

An important aspect of curricular reform is the assurance of quality in all curricular activities, including assessment, with ultimate benefits to the stakeholders - students and community at large. It is globally accepted that the role of assessment is not simply to assess a student on preset criteria and make a judgement but also to facilitate his learning through a continuous process of feedback and at the same time provide him/her the opportunity to improve.¹ This realization has resulted in a shift of focus from end of course summative assessment to continuous formative assessment, ideally with feedback, to guide the learner's advancement.

Summative Assessment is for 'making an overall judgment about competence, fitness to practice, or

qualification for advancement to higher levels of responsibility'.² formative assessment is defined as "the process used by teachers and students to recognize and respond to student learning in order to enhance that learning, during the learning."³

Currently, quality of medical education in Pakistan is determined by evaluating the learning through high stake assessments, with little emphasis on determining whether the student has actually 'learnt' and is able to apply his learning or not. In order to align the objectives of assessment with the outcomes of medical education imparted to the learners, formative assessment is advocated as an integral part of the curriculum.

This paper will give an overview of formative assessment, its implications and recommendations for implementation in medical institutes of Pakistan.

Formative Assessment

Formative Assessment is different from summative assessment as it focuses on the learning and improvement of learners rather than taking decisions on "pass" or "fail". It provides learners with opportunities to recognize their weaknesses and enables teachers to identify areas where students may need support. The formative assessment also prepares learners for the summative, decision making, assessments, if necessary. Gipps describes formative assessment as "the process of appraising, judging or evaluating students' work or performance and using this to shape and improve students' competence."³ This may not be a privilege available in summative assessments. This feedback or dialogue is however seen as an essential component of formative assessment where the intention is to support and enhance learning.

The reality of formative assessment has not been put to test as much as it should be. With regards to the well being of stake holders, it cannot be overemphasized that formative assessment that is "for learning" rather than summative assessment "of learning" is the need of the day in order to improve healthcare professionals' capacity to better serve the community.

Formative assessment is increasingly being used to refer to assessment which provides feedback, about the students' learning during the teaching and learning process, and not after. It is considered formative only if it results in action by the teacher and students to enhance learning.³

Existing Status and Need for Formative Assessment

Institutes in Pakistan lay major stress on summative assessment. Formative assessment is not a mandatory inclusion in the curriculum. Institutions that consider themselves progressive and learner-centered conduct "formative assessment" as a fleeting part of the curriculum by using various methods of student assessment that may or may not include feedback to learners. In most places, the faculty has not received any formal training on giving an objective, constructive and, hence, effective feedback. The learner is primarily driven by the need to perform well in assessments and is focused on getting good grades without paying attention to gaps in learning. His/her achievement in summative assessment may not reflect on learning per se. It is therefore useful for the learner and the faculty to identify deficiencies and shortcomings in learning so that remedial learning may be availed. For this purpose formative assessment can be used to enrich the learner's experience and provide him/her the opportunity to improve.⁴

Formative assessment has been identified to have tremendous educational connotations on the degree of learning and has been recommended as an integral part of the curriculum rather than just an "add on".⁵

Role of Feedback in Formative Assessment

Feedback is the single most important factor that has shown to have the maximum impact on student learning and accomplishment^{6,7} and determines the effectiveness of the formative assessment.

The quality of the feedback given to the learner is of prime importance. Its technical aspect, appropriateness, accessibility, catalytic and inspiring value to the learner^[8] are largely responsible for its positive or negative pedagogical connotations. The feedback provided is only useful to the recipient

if it is 'specific, accurate, timely, clear, focused upon the attainable and expressed in a way which will encourage a person to reflect upon his learning and feel the necessity to change'.⁴

Implementation

Inclusion of formative assessment into the curriculum will require commitment from the institutions to support all activities that would facilitate its implementation. Within the guidelines provided by the regulating bodies, institutes can integrate formative assessment into their curriculum using strategies that can be unique or time-tested.

Enabling Environment

Mandating formative assessment as an integral part of the curriculum will require a buy-in of the faculty through an awareness campaign advocating its impact on learning outcomes.

The institutions will have to provide and support an enabling environment that nurtures the development of faculty and appreciates their contribution through rewards and incentives.

In order to ensure quality feedback given in formative assessments, teachers need to be trained and an environment conducive to such a culture should be facilitated. The educator must also be sensitized to the psychosocial needs of the recipient.¹

Faculty Training

The faculty can be encouraged to develop and use creative methods for formatively assessing the learning in addition to advising the use of common assessment tools. In addition, formal training in interacting with students, conveying expectations and giving effective feedback should be a norm. No matter how well-intentioned the formative assessment is, its effectiveness is reduced if students are not appropriately informed of what is expected from them.⁴

According to Cohen, feedback "is one of the most instructionally powerful and least understood features in instructional design". It is a highly technical task and it cannot be assumed that faculty members who are experienced in teaching are also geared to provide feedback - a process that can either build or shatter a learner's self-efficacy. It should not be regarded as an implicit activity or as a routine part of student teaching,⁵ but should be formally addressed.

Student Training

In addition to the faculty, the students need to be informed about the reasons for inclusion of formative assessment in the curriculum. Since the opportunity to improve is one of the factors that determine the usefulness of the activity, the students must be taught how to receive the feedback, acknowledge his deficiencies and bridge the gaps in learning through active initiatives.⁴

Role of Department of Medical Education (DME)

The DME in medical schools and universities can play a major role in the implementation of formative feedback by providing training, monitoring and evaluation of the process. It can also help by guiding the faculty about how, where and when to incorporate the formative assessment within the schedule with minimal compromise on content delivery. The Dean and Academic Council need to avail the expertise of the DME and provide support and leverage in effective integration of formative assessments. Guidance and training can be provided to faculty by the DME, in choice of teaching and assessment strategies, and providing feedback.

Students' Feedback

Regular feedback and perceptions of the students should be taken regarding the usefulness of the formative assessment in developing their concepts, in adjusting the content and its delivery. A wealth of information can be obtained from student feedback which can be used to improve the educational process. This information should become a part of curricular evaluation.

Periodic Evaluation of Curriculum

Regular of formative and summative assessment, feedback given to and obtained from students, must provide data for curricular evaluation. External and internal reviews should be ensured by all institutes to assure quality in assessments and curricular activities as a whole. Institutional accreditation should

be subject to such programme evaluations by experts in medical education and evaluation. DME can keep records of monitoring and evaluation to assess and suggest measures for improvement.

Potential Hurdles in Implementation

Many issues can be predicted that may jeopardize the effectiveness of formative assessment. Awareness of these issues can facilitate anticipation and troubleshooting to ensure meaningful implementation.

Enabling Environment

Developing meaningful assessment is time consuming. So is providing feedback. Some institutions have a class size of over 100 in Pakistan. Dividing a class among faculty to obtain feedback on the formative test is a demanding and time-consuming process. The faculty may regard this activity as an additional burden upon their time and resources. Recommendations are that the intense focus on summative assessments may be reduced and a balance between formative and summative assessments should be maintained and propagated.⁴

Students may also consider it an additional burden to prove themselves. Striking an ideal balance between summative and formative assessments is crucial to allay this anxiety which can further be lessened by proper training and education.⁴

Attendance

Formative assessment does not directly affect promotion and progress of learners; therefore, there is always a potential of learners to not take the assessment seriously and not showing up for the planned formative assessment. The issue can be sorted by attaching some credit to the formative assessment. When the faculty believes in the process, faculty members can motivate students to attend formative tests. Also, it is possible to show if there is any correlation between students' marks in formative tests and their marks in summative ones. When students realize that this exercise is useful, their attendance in such an activity will be high.

Faculty Training

Making training and evaluation mandatory for all faculty involved in the process of assessment may have logistic implications and at the same time pose difficulties in objectively evaluating the effectiveness of the training sessions. The change in the faculty members' practice of giving feedback will be problematic to assess and monitor without seeming condescending.

Feedback has extensively been cited as an instrument for promoting student learning but literature also talks about the negative impact of an ineffective feedback. Feedback given at the wrong time, in a wrong way, with wrong content is highly ineffective and can also be counter-productive for the process of learning. "Feedback that has a negative effect is not formative."⁹

Trained and motivated faculty can motivate the learner, improve his self efficacy, facilitate him/her as a self regulated learner and help achieve the outcomes of the curriculum through a successfully implemented formative assessment.^{1,6}

The top administration has to believe in the concept and use of formative feedback. It has to be ready to invest time and money in providing training to faculty. Qualified medical educationists from within the faculty should be used and those from within the country may be invited for training purposes. This will enhance exchange of ideas and collaboration among institutions, leading to learning from each others' experiences.

The Way Forward

Thorough research on the significance of the formative assessments and its positive impact on learning has since long convinced many international accrediting and quality assurance bodies to endorse and mandate formative assessment in the curriculum.

Both formative and summative assessments have been recommended as necessary by the World Federation of Medical Education (WFME)[10] and Section ED 30 of Liaison Committee of Medical Education (LCME), which states that:

"The directors of all courses and clerkships must design and implement a system of formative and

summative evaluation of student achievement in each course and clerkship"¹¹

For improvement in medical education in Pakistan, we need to develop according to the global acknowledgement of the value and worth of formative assessment and extensive research, which substantiate the position that:

Regulatory and accrediting bodies in Pakistan, like PMDC and HEC, should direct institutions to make formative assessment a mandatory part of the curriculum through use of strategies like formative OSCEs, minute papers, concept maps among others, which are practical in their respective environment. The data collected can be used to evaluate and improve the curriculum.

Qualified medical educationists need to be involved in developing training programmes for faculty and students. Medical educationists can also help the faculty incorporate the formative tests in the existing curriculum with minimal change.

Faculty needs to be motivated to attend the training programmes, understand the efficacy of this process and practice this (process of formative assessment) to the best of their abilities. Those involved need to be formally trained through regular workshops, certified and monitored through observations and students' feedback.

The learners need to be educated about the impact of formative assessment on their learning and encouraged to avail the opportunity to address the gap between expectations and actual performance. Periodic informal internal reviews and scheduled external reviews of curriculum that include the evaluation of formative assessment would be worthwhile.

Regulatory bodies are required to ensure that the institutes provide an enabling environment that promotes, facilitates and acknowledges curricular activities that nurture learning.

In the end, it is hoped that more research will come forth from various medical institutes of Pakistan sharing their experiences about formative assessment so that resources, based on local evidence, could be pooled for developing this process further.

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