

## Practice of formative assessments of undergraduate medical education of Bangladesh

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### Abstract

**Objective:** To examine the ways and means of practice of formative assessments in undergraduate medical education of Bangladesh.

**Methods:** This descriptive study was conducted in at four conveniently selected medical colleges of Dhaka, Bangladesh. Views of 174 teachers and 332 students were collected using four self-administered semi-structured questionnaires.

**Results:** It was found that majorities of the teachers followed the MBBS curriculum (93%), academic calendar (60%), order of head of the department (57%), text book (64%), experience from past examinations (55%), and their own classes (43%) during assessing the students in the formative examinations. On the other hand, the students followed classes of teachers (98%), textbooks (93%), guide books (73%), questions of their past examinations (68%), advice of senior students (61%) and opinions of classmates (59%) to prepare themselves for their formative assessments. The students mentioned that they required very high or high level of recall knowledge (87%), clear understanding (90%) and application of their learning in new situation (73%) during appearing the formative assessment. The students also mentioned that the uses of 'documented questions' by typing the questions on question-paper / question-card were given only 31% cases in the card final and 56% in term final structured oral examinations (SOE) boards. Sometimes, there were 'no written documented question' in the SOE and the examiners asked the questions of their own choice in the card final ((40%) and term final (12%) examinations. Sometimes, only the 'contents were written' in the question cards and the examiners asked the viva based on the content lists in the card final (45%) and term final (48%) examinations. Some students also mentioned that the examiners provide clues if someone fails to answer the questions in item (38%), card final (26%) and term final (32%) examinations.

**Conclusion and recommendation:** The study recommended that the teachers of the medical colleges should be trained up for proper practice of all areas of the assessments as per the standards and curriculum.

**Key words:** Formative assessment, Undergraduate medical education, Assessments in medical education.

### Introduction

The medical educational institutes highly focused their attention on summative assessment, it is to consider that over the course of past few decades, teachers could build in many opportunities to assess students' learning and then use this information to make beneficial changes in their teaching. This diagnostic use of assessment to provide feedback to teachers and students over the course is called formative assessment. It stands in contrast to summative assessment, which generally takes place after the end of a course and requires making a judgment about the learning by grading or

scoring a student.<sup>1-3</sup>

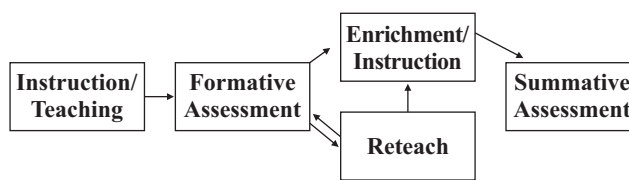
If we think a student is a plant of a garden. Then the formative assessment is equivalent of feeding and watering the plants appropriate to their needs to enhance it growth. The summative assessment, on the other hand, is the process of simply measuring the growth of the plants. The vast majority of genuine formative assessment is informal, with interactive and timely feedback to the students. It is widely and empirically claimed that formative assessment has great positive influence on learning and teaching.<sup>4-13</sup>

The formative assessment is forward looking provides feedback which leads to students recognising the learning gap and filling it. This assessment includes both feedback and self-monitoring. Ultimately this assessment is used essentially to feedback into the teaching and learning process.<sup>1-13</sup>

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**Fig:1** Relationship between formative and summative assessments.<sup>7</sup>

There are different types of formative assessment methods available (Types of Formative Assessment, no date). For examples: question and answer in the lesson, short tests and quizzes, homework exercises, skills assessment using formal assessment criteria, observation of performance, assignments, projects, written questions / exercises with short / essay/ multiple-choice questions, simulations, games, and conferencing / reviewing / audit.<sup>14</sup>

## Methodology

This was a descriptive type of cross-sectional study. This study specifically focused to find out the practice of formative assessment in undergraduate medical education of Bangladesh. It was conducted in conveniently selected two government and two non-government medical colleges of Dhaka city. A total of 174 teachers and 332 students (120 students of phase-1, 110 students of phase-2 and 102 students of phase-3\*) expressed their views by using four similar types semi-structured self-administered questionnaires.

[\* Phase-1 is first 1½ year, phase-2 is middle 2 years and phase-3 is last 1½ years of the MBBS course as per their curriculum 2002]

## Result

**Table 1:** Distribution of the medical teachers by their opinion regarding the items they considered to conduct formative assessment in their institutes (Multiple responses) n=173

Table 1 has shown that most of the teachers followed the

The items the teachers follow	%
Curriculum	92.5
Text book	63.6
Academic calendar	60.1
Order of department head of the department	57.2
Experience from past examinations	54.9
Own class	42.8
Opinion of senior teachers	37.6
Opinion of the teachers of the same department	32.4
Opinion of students	26.0
Question of past examinations	22.5
Opinion of the teachers of other department	15.0
Other items	4.6

MBBS curriculum (93%) during conducting formative examinations in their institutes. It was also found that a very good number of teachers followed 'academic calendar (60%)', 'order of head of the department (57%)', 'text book (64%)' and 'experience from past exam (55%)' for this purpose. There were some teachers who followed their 'own class (43%)', 'opinion of senior teachers (38%)', 'opinion of the teachers of the same department (32%)', 'opinion of students (26%)', 'question of past examinations (23%)' and 'opinion of the teachers of other department (15%)' for the formative

assessments. Only 4.6% teachers have mentioned about some other items for the assessments e.g. 'to find clinical correlation with the contents', 'objectives of the assessment', 'experience from training, workshop and seminar', 'analyzing present need & situation' and 'topic related other subjects'.

**Table 2:** Distribution of students by their opinion regarding the items they considered to appear in the formative assessment (Multiple responses) n=332

The items the teachers follow	%
Classes of the teachers	97.9
Text book	93.1
Guide book	72.6
Past examination questions	67.5
Advice of senior students	61.1
Opinions of class mate	58.7
Curriculum	32.8
Department or college notices	26.5
Academic calendar	12.0
Study guide	5.4
Other item the students follow	4.2

Table 2 has shown that most of the students followed 'classes of teachers (98%)' and 'textbooks (93%)' to prepare themselves for their formative assessments. It was found that a very good number of students (73%) followed guidebooks for this purpose. A major portions of the students mentioned that 'questions of their past examinations (68%)' and 'advice of senior students (61%)' and 'opinions of classmates (59%)' also play important role prior to their formative examinations. The 'curriculum' and 'department / college notices' were important for 33% and 27% students respectively. Role of 'academic calendar (12%)' and 'study guide (6%)' were important only for few students. There were very few students who (4.2%) have mentioned some other items that were considered for the assessments like: 'hand note', 'library work' and 'advice of parents'.

**Table 3:** Distribution of students by their opinion regarding level of competence on different types of knowledge required in the formative assessments (Multiple responses)

Level of competency	The different type knowledge areas		
	Recall n=322	Understanding n=330	Application n=323
Very high	31.4%	42.4%	30.7%
High	55.9%	47.9%	42.7%
Low	11.8%	8.8%	21.1%
Very low	0.9%	0.9%	5.6%

Table 3 displaying the students' opinion regarding level of knowledge they required in their formative assessments. Out

of 322 students majorities viewed that they required 'high (56%)' or 'very high (31%)' amount of 'recall knowledge' in their formative examination, while only 12% and 1% students viewed it as 'low' or 'very low' respectively. Similarly, out of 330 students majorities opted that they required 'high (48%)' or 'very high (42%)' amount of clear understanding of the contents during the formative assessment, but only 9% and 1% students views it as 'low' or 'very low'. On the other hand, among the 323 students though majority viewed that they required 'high (43%)' or 'very high (31%)' amount of 'skill', but 21% and 6% of them mentioned it as 'low' or 'very low'.

**Table 4:** Distribution of students by their opinion regarding procedure of viva (oral examinations) in different formative examinations (Multiple responses)

Procedure of formative viva	Type of formative test		
	Item n=32	Card n=317	Term n=309
All question are documented	3.9%	30.6%	55.7%
No written question	6.6%	39.7%	12.0%
Only contents are written	6.5%	44.7%	47.6%
Teachers provide clues	7.9%	25.7%	31.8%

[\* **Item examinations:** These examinations (only oral) in the MBBS course held most frequently on small amount of course contents.

☛ **Card-final examinations:** After successfully completing several item examinations students have to appear the card-final examinations (written, oral and practical/clinical) in the respective subjects.

☛ **Term-final examinations:** After successfully completing some card-final examinations students have to appear the term-final examinations (written, oral and practical/clinical) as a prerequisite to appear the summative (Professional) examinations.]

Table 4 has depicted distribution of students' opinion regarding procedure of viva (oral examinations) in different formative examinations of different subjects. There were very few students (4%) who have mentioned that the item examinations are conducted using 'documented questions'; on the other hand, the use of documented question-papers or documented question-cards were much higher in card-final (31%) and term-final (56%) examinations. It was found that majorities (77%) of the students have mentioned that there were 'no written / documented question' on question papers and the teachers asked the viva questions of their own choice in the item examinations; on the other hand, this questioning without any written question were much lower in card-final (40%) and term-final (12%) examinations. There were some students who expressed that 'only the content-list were written' on the question-paper /question-card and the teachers asked the viva based on the content-lists in the item (37%), card-final (45%) and term-final (48%) examinations. Some students also mentioned that the examiners / teachers

provided clues if someone fails to answer the viva questions in item (38%), card-final (26%) and term-final (32%) examinations.

## Discussion

It was found that the students follow the guide books to prepare themselves for the formative assessments (72.6%) (Table 2). The guidebooks give the way to pass the examinations easily by acquiring some recall knowledge on the subjects that is important for the examinations. Studying the guidebook instead of going through the textbook may lead the medical students to memorize only the contents instead of deep learning. According to Bradford K (no date)<sup>16</sup> and Rushton A(2005)<sup>17</sup> it can be stated that this tendency of rote learning and vomiting in the examinations makes the students surface approach learners. The study also has found that only 26% students feel that the teachers considered the opinion of students to conduct formative assessments (Table 1). From this findings we can assume that our system of undergraduate medical education is not student centered as per the set criteria of O'Neill G & McMahon T (no date)<sup>18</sup>; rather it might be highly teacher centered which is a barrier in higher education. Though the curriculum, study guide and academic calendar can play very important role for the student's learning but there were very few students (Table 2) who take any help from these materials.

More than 73% students viewed that the level of recall knowledge, understanding and application skill required in their formative examining were high or very high (Table 3). This means that all these domains are equally emphasize in the assessments of the course and students have to acquire all these competencies in their formative assessments.

As per the guidelines of the updated Undergraduate Medical Curriculum of Bangladesh<sup>19</sup> all the oral examinations must be structured. In the structured oral examinations (SOE) all the questions must be documented in card (paper) and this must have answer key with rating scale. This is also mentioned in the available literature that no clue should be given to the candidates if they fail to answer. This should be practiced from very beginning of the course in the formative assessments (e.g. item, card final and term final examination) so that students and teachers will not face huge problems in the summative assessments (professional examinations). The present study has found all these principles of SOE has not been properly practicing in the medical colleges (Table 4) instead, they are conducting these tests by their own choices.

## Conclusion and recommendation

Some areas of the formative assessments in the selected medical colleges were practicing properly and many areas were not practicing as per the standards and the under graduate curriculum. Workshops and seminars can be arranged for the teachers of the medical colleges to ensure proper practice of the formative assessments.

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