Review Article

Types of feedback in medical education – A new hypothesis in alignment with competency-based medical education

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Abstract

Feedback is an important component of the teaching-learning process. It drives the process in the proper direction to achieve the learning outcomes of the course. There are many types of classification of feedback that result in many varieties of feedbacks in medical education. To simplify the classification we propose a new way of classifying the feedback. The new model classifies feedback based on who drives it into Intrinsic feedback or Short feedback which is driven by students and Extrinsic feedback or Long feedback which is driven by teachers. In a class, most of the students would be using Extrinsic feedback and only a few students would be suing Intrinsic feedback. But the goal of the curriculum should be to make the students use more of Intrinsic feedback. This transformation ensures autonomy and self-directed learning which the cornerstones of Competency-Based Medical Education are.

Key words

Feedback, Teaching and learning, Competency-based medical education.

Introduction

In the process of teaching and learning, feedback forms an important component. Though it has been a topic of talk of recent interest, it has been practiced unknowingly and informally since the times of Hippocrates. It has become an intense area of study and research in recent times as many innovations and changes are taking place in the medical education world over [1, 2]. Medical institutions are progressively transforming their medical curriculum from a traditional approach to Competency-Based

Medical Education (CBME), which is a student-centered curricular activity. Students must be appraised regularly regarding their progress, both in direction and amplitude, and if required redirection must be given at the appropriate time. The goal of giving feedback is to make the receiver achieve their full potential. It gives them a perception of their knowledge, skills, and attitude, which are important linchpins of CBME [3]. It is common knowledge that everybody receives some form of comment or criticism from their parents, friends, relatives, neighbors, seniors, etc., on many occasions about their actions and behaviors to correct themselves in the future. In medical education, it is given by teachers, friends, seniors, staff, patients, etc., mostly in an implicit manner. To produce an effective change, it must be properly organized and explicitly expressed [4]. When the learner receives comments about their performance, it acts like an impetus that helps them to keep their motivation to do better. There are different types of classification of feedback based on the process, the purpose, the style of delivery, etc., that result in the availability of several feedbacks in medical education. It is common knowledge that whenever there is the availability of different methods for a single purpose, then no single method is the best, and the maximum advantage is gained by adopting a mix of different methods depending upon the situation. To simplify the classification, we propose a new type of classification of feedback that gives more importance to the student in the process of teaching and learning, which is in alignment with CBME.

The Feedback

The concept of "Feedback" has its origin from rocket science, where the feedback is used as information that a system uses to make adjustments in achieving its goal. It is regarded as the control of the system that controls it by feeding back the results of its performance [5]. If the backflow of information from the performance to the performer alters his future actions in the right direction, then the desired change is said to have happened. This desired change in performance is learning. Learning happens due to teaching. Thus, as remarked in the introduction, feedback forms an important component of the teaching and learning process.

The types of feedback

The feedback is commonly classified [6] as follows

1. Formal and informal feedback based on the process and settings [7].
2. Constructive, inspiring, and corrective feedback based on purpose [8].
3. Formative and summative feedback based on breath [9].
4. Sandwich and Pendelton feedback based on the delivery [9].

The above-mentioned types and other types of feedback involve both teacher and student. The teacher plays a major role in those types of feedback. The role of the student is the mainly passive reception of the comments and subsequent actions upon it. The potential of students as a controller of his academic activities have been underestimated so far in the traditional medical curriculum. As medical institutions getting ready to embrace the new curriculum CBME, which is a student-centered curriculum, the medical educators should also rethink the ways the feedback has been classified hitherto.

Our hypothesis of new types of feedback

Here we propose a new type of classification of feedback based on the persons involved in the process of feedback. In the traditional classification, as discussed above, both the teachers and students are involved and the process is mainly driven by teachers. We propose a model, where a student can provide feedback for himself with or without the involvement of the teacher. This is in no way to belittle the role of teachers in providing feedback. This model aims to give more autonomy to students to shape their careers. The autonomy will provide them with confidence and stimulate self-directed learning, which is one of the goals of CBME. We

are classifying feedback into two types. They are Intrinsic feedback or Short feedback, Extrinsic feedback or Long feedback.

Intrinsic feedback or short feedback

If only one person is involved in the feedback, it is called Short feedback. It is also called as Intrinsic feedback because the understanding, judgment, analysis, motivation, and correction of his actions are from the student himself. This is a new type of feedback proposed by us. For this type of feedback to be successful, the student should have a good understanding, keen observation capacity, self-analysis, self-motivation, and self-directed learning as characteristic features. Since it is controlled by the student himself, he keeps experimenting with various other ways of doing things which may lead to innovations.

Extrinsic feedback or long feedback

If two or more persons are involved in the process of feedback, it is called Long feedback. It is also called as Extrinsic feedback because the comment, criticism, corrective measures and motivation comes from outside the student, usually from teachers. This is our conventional type of feedback.
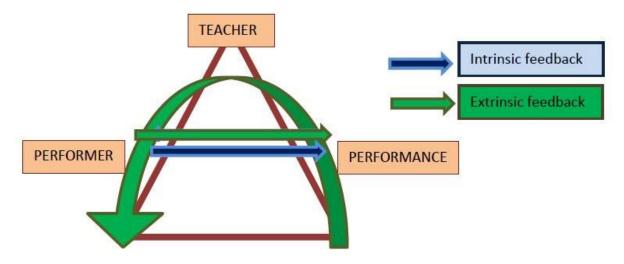
The triangle in **Figure - 1** describes the relationship between teaching, learning, and feedback. The corners of the triangle are considered to be formed by the teacher, performer (student), and performance. The diagram also depicts the two types of feedback; Intrinsic feedback and Extrinsic feedback. In Intrinsic feedback, the information flows from the performance to the performer i.e., if the performer can differentiate the difference between the desired performance (learning outcome) with actual performance, then it forms the Intrinsic feedback. On identifying the difference, if he initiates corrective measures to achieve the goal, it indicates that he has learned from the teaching. But most of the time this feedback happens only with very brilliant students. They learn with Intrinsic feedback

itself. Most of the students need Extrinsic feedback, as they would be unable to appreciate the difference between the actual performance and the desired performance. The teacher needs to observe the difference and advocates corrective measures. Few students would be able to assess the difference between their performance and intended one, but incapable of initiating the corrective measure by themselves. They need comments from the teachers to correct their deficiencies. Thus they use Intrinsic feedback partially but finally depend on Extrinsic feedback. Thus this type of feedback also helps to classify students into brilliant, good, and average based on which type of feedback they utilize. Brilliant students use Intrinsic feedback exclusively with little inputs from the teacher. Good students use Intrinsic feedback partially but depend on Extrinsic feedback also. Average students depend on Extrinsic feedback completely. The additional feature about the long feedback is that not only the performer changes his performance according to the feedback; the teacher also changes his method and content of teaching after introspecting his actions to conform to the need of the students.

The advantages of short feedback, as shown in **Table - 1**, are its autonomy, self-directed learning, adult learning, life-long learning, critical thinking, and innovative ideas that develop in students using it. The other advantages are the achievement of learning outcomes and self-sustainability. The disadvantage is that only a few students can use this type of feedback. In a class, very few students only would be using Intrinsic feedback. Few students would be using both Intrinsic (partially) and Extrinsic feedback. Most of the students depend on Extrinsic feedback to improve their learning. As we are transforming ourselves from a traditional medical curriculum to CBME, which stresses more on student-centeredness, the type of feedback given to students also must transform. The aim of the teacher should be to advance the students progressively from the Extrinsic feedback stage to the Intrinsic feedback stage through the

intervening phase of using both types. This approach will form the basis of making the students adult learners and later life-long learners which are the goals of CBME.

Figure - 1: The teacher, the performer, and the performance triangle showing Intrinsic and Extrinsic feedback.

Table – 1: Differences between intrinsic feedback and extrinsic feedback.

Sr. No.	Intrinsic feedback	Extrinsic feedback
1	Involves only the student	Involves both the teacher and student
2	Student-centered activity	Teacher-centered activity
3	Used by brilliant students	Used by good as well as average students
4	Provides autonomy to students	Complete autonomy is not possible
5	Stimulates Self-directed learning	Less chance of Self-directed learning
6	Ground for adult learning and life-long learning	Less chance for adult learning and life-long learning
7	Fosters Critical thinking & innovative ideas	Less chance for Critical thinking & innovative ideas
8	Student becomes self-sustainable	Student always depends on the teacher
9	Learning outcomes are easily achieved	Consistent effort by the teacher is needed to achieve learning outcomes by the students
10	Also called as Short feedback	Also called as Long feedback

Summary

There are many ways of classifying feedback. We proposed a new way of classifying feedback based on who drives the feedback. If the feedback is driven by the student himself it is called Intrinsic feedback or Short feedback and if it is driven by the teacher it is called Extrinsic feedback or Long feedback. Though the Intrinsic feedback is used only by few students in a class, the aim of the curriculum should be to make as many students use it, as that will achieve the important goals of CBME like adult learning, self-directed learning, and life-long learning.

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