Providing Feedback:
Practical Skills and Strategies

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Feedback is an essential component of education. It is designed to influence, reinforce, and change behaviors, concepts, and attitudes in learners. Although providing constructive feedback can be challenging, it is a learnable skill. The negative consequences of destructive feedback or lack of feedback all together are far-reaching. This article summarizes the components of constructive feedback and provides readers with tangible skills to enhance their ability to give effective feedback to learners and peers.

Key Words: Feedback; medical education; residency; radiology; education.

INTRODUCTION

Whether in the world of business, education, or clinical practice, feedback is an essential component to the development of the recipient. Feedback is designed to influence, reinforce, and change behaviors, concepts, and attitudes [1]. It involves sharing information with the recipient for the purpose of narrowing a performance gap. In fact, some may argue that it is the cornerstone of education [2]. A world without feedback would lead to unabated poor performance, lack of reinforcement of good performance, and essentially no path to improvement [3]. Many publications and discussions have focused on feedback, yet providing effective feedback remains a challenge for many academicians. The goal of this article is to present practical skills and strategies for providing feedback to learners and peers.

ASSESSMENT AND FEEDBACK

A discussion of feedback requires a brief discourse on assessment and how these two concepts are related. Within the context of education, assessment steers learning and has considerable potential to influence a student's personal motivation and overall learning experience [4]. In the formal education lexicon, assessment is described as formative versus summative. Formative assessment is best characterized as "assessment *for* learning" and summative assessment as "assessment *of* learning." What is "assessment *for* learning" or formative assessment? Simply put, it is an assessment of what the learner knows, understands, or can do during the learning activity. This information is then used to provide feedback throughout the activity, with the goal of improvement. For example, Dr. Richardson did not administer epinephrine during the simulation of a severe contrast reaction—why didn't she, and how can we help her improve her performance during the next simulation? "Assessment *of* learning," or summative assessment, evaluates whether the learner knows, understands, or is able to successfully complete a predetermined activity. A summative assessment occurs at the conclusion of the learning activity with the goal of assessing whether the recipient has met performance expectations or standards [3,5–7]. In this context, a summative assessment constitutes a higher stakes judgment of the student's performance or credentials [4]. For example, is Dr. Smith a board–certified physician or not? (see Table 1 for a summary of formative versus summative assessment).

In summary, formative assessments inform the student (in the previous case, physician) about his or her performance with guidance on how to improve, whereas summative assessments educate the public and other stakeholders about whether a potential provider is qualified versus unqualified, or even a false representative of the healthcare field [3–9].

Although formative and summative assessments have differentiating features, a blurring of this line can occur with feedback. Based on the preceding description of assessment, the term "feedback" seems more closely aligned with formative assessment; however, feedback can also occur with summative assessment. For example, consider a first-year radiology resident who scores 10th percentile on the American College of Radiology (ACR) in-training examination. Although this score constitutes a summative assessment of this resident's performance compared to all other first-year residents, this information can also be used to provide formative feedback to the resident, with a goal of improved performance on future examinations. Therefore, it serves not only to "judge" the resident's performance compared to peers, but also to provide information which can be shared and reflected upon [2,7,8]. Alternatively, conventional formative assessments are sometimes used in a summative manner. For example, consider the radiology resident portfolio.

TABLE 1. Formative Versus Summative Assessment

Formative Assessment	Summative Assessment
Throughout training period	End of the training period
Frequent	Infrequent
Low stakes—suggestions for improvement on central line placement or positive reinforcement of high level of professionalism	High stakes—standardized exam scores such as MCAT, STEP 1, ABR Core, and certifying examination
Share information about performance between student and teacher	Confer judgment in the form of grades, degree, and certification
Relatively time-consuming for the teacher	Quicker approach to assessment by an institution

ABR, American Board of Radiology Core Exam and Certifying Exam; MCAT, Medical College Admission Test; STEP 1, United States Medical Licensing Exam Step 1.

Documented data may include ACR in-training and American Board of Radiology (ABR) Core examination results, procedure logs, rotation evaluations, peer and self-evaluations, progress toward milestone achievement, and scholarly and quality projects. In some situations, portfolio data may be used for a summative approach to advancement (2,7,9).

FRAMES AND PERCEPTION OF FEEDBACK

For effective feedback, both the frame of the teacher and that of the student must be considered. In the simulation literature, this is discussed within the domain of reflective practice. Instructors and students tend to make sense of an external reality by utilizing mental models based on their internal frames. This explains how the same situation can be perceived differently by two observers. Therefore, the teacher should attempt to understand the frame the student is acting under during the behavior in question. Deciphering the frame will allow the teacher to respond with differing feedback to different students. Consider the example of a healthcare provider responding to a desaturating patient. If the provider has only been trained to use bag-mask ventilation, this is the frame the provider resides and responds in. If the patient needs a different type of ventilation, the provider will err. Although the action may be flawed, the frame the provider resides in should be considered. The "action makes perfect sense" to that provider in the "heat of the moment." Another example involves the professionalism competency. If a healthcare worker resides in the frame that reporting errors leads to a punitive response, the worker will not report errors (10). The previous examples demonstrate the impact of frames on student or recipient behavior, but keep in mind that the teacher's frame also impacts the feedback interaction.

Within the domain of frame analysis, the instructor should also consider the recipient's feedback orientation (10). As described by London and Smither in 2002, "[f]eedback orientation refers to an individual's overall receptivity to feedback, including comfort with feedback, tendency to seek feedback

and process it mindfully, and the likelihood of acting on the feedback to guide behavior change and performance improvement" (11). Essentially, this circles back to the "frame" of the recipient, specifically during the actual feedback conversation. The recipient should also be aware of his or her own "frame" and learn how to receive feedback (12–14).

Once the situation is analyzed in the context of the frame of the recipient, the instructor can respond with positive or corrective feedback. Positive feedback involves communicating a person's strengths and reinforcing these behaviors or actions. Positive feedback is perceived as delivering good news. Corrective (negative) feedback involves communicating a person's shortcomings or areas of underperformance and discussing strategies for change. Corrective (negative) feedback is perceived as delivering bad news (15,16).

DESTRUCTIVE VERSUS CONSTRUCTIVE FEEDBACK

Destructive feedback is general, subjective, and may lead to judgmental assessment on a personal level (student performed poorly due to a personal inadequacy). It is sometimes delivered in a conflicted and tumultuous environment, with an inconsiderate, biting, sarcastic, or harsh tone. The exchange may even contain veiled threats, resulting in fear, anger, or tension in the recipient, loss of self-esteem, demotivating behavior, and reluctance to ask questions. It can reinforce poor adaption techniques by the student or recipient for addressing poor performance. Ultimately, it may cause feedback avoidance by the learner (1,3,17–21). The frame of mind of the authoritative figure impacts the delivery style of the feedback. Frustration or annoyance with "mistakes" made by the student can result in difficulty with controlling emotions by the teacher, leading to destructive feedback (4,8,21). Examples include the statement "If you don't improve, I'll get someone else to do it." Words or phrases associated with destructive feedback include domineering, curt, ridicule, demean, negative reinforcement, one-way communication, confrontational, and abusive (20).

For completeness, the concept of destructive feedback in the context of abusive behavior from a teacher or authority figure is mentioned, as recognition of this behavior is the first step to changing from a destructive to a more constructive approach. The authoritative figure must be made aware of the negative impact of destructive feedback and taught effective methods for providing reflective feedback (4,8,9,21,22). Consider the statement "How stupid can you be, a college student would not make that mistake."

In contrast, constructive feedback is best described as specific, objective, timely, and nonjudgmental. Conducting a respectful, reflective, two-way conversation in a safe environment is a key component to providing constructive feedback. It essentially empowers the learner by emphasizing the learner's ability to recognize his or her own performance gap and help develop ways to correct it. Constructive feedback leads to future motivational learning that enhances the learner's performance (1,3,4,6,8,21). Words or phrases