

Giving Feedback on Clinical Skills: Are We Starving Our Young?

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Abstract

Background Feedback to clinical learners about their performance is crucial to their development into competent clinicians. Most feedback is provided by clinicians who have little or no formal training for this aspect of their teaching role.

Method Narrative review.

Findings Feedback is most effective if provided by clinical mentors based on observations of behavior, with emphasis on correctable deficiencies. The difference between feedback, which is formative, and evaluation, which is summative, needs to be understood by both the giver and receiver. The ability to self-assess is an

important related concept, with studies showing that self-assessment skills are lowest in individuals found to be the least competent in external assessments and in individuals with a high level of confidence.

Conclusions Feedback is an important component in learners' development, and clinical faculty should be educated about the importance of providing feedback, and the means to do so effectively must be provided to them. Despite several decades of accumulated knowledge in this area, the evidence from learners is that we continue to starve them of this critical nutrient for their growth.

Introduction

The practice of providing information to medical learners about their performance in clinical situations to guide their future performance was enunciated in the classic essay by Ende,¹ entitled "Feedback in Clinical Medical Education." That article has been cited by almost all subsequent authors who have dealt with the topic. Ende¹ defined this process as *feedback*. In the context of clinical teaching, "[d]istinct from evaluation, feedback presents information, not judgment. Feedback is formative. As an integral part of the learning process, it allows the student to remain on course in reaching a goal. Evaluation, on the other hand, is summative. It comes after the fact and presents a judgement."^{1(p777)}

While asserting that feedback is a key component in the acquisition of clinical skills, Ende¹ challenged educators with the statement that "feedback is often omitted or handled improperly."^{1(p777)} Unfortunately, there has been little change in this regard in the 29 years subsequent to the publication of his seminal article. This lack of progress is despite considerable information on the

subject, in not only the medical context but also in business administration, organizational psychology, and education literature.² However, because most teaching in the clinical setting is carried out by clinicians who are not trained educators, it is perhaps not surprising that the translation from theory and research to practice has not occurred on a large scale. The lack of a systematic approach to providing effective feedback on clinical performance may be due primarily to the absence of a framework for clinicians to do so. Put simply, the tools have not been provided to them in an easily accessible format.

Feedback Versus Evaluation

There is a body of knowledge and skill sets that must be mastered to be a competent physician, and the educational institution has a duty to ensure that a certain standard has been attained by the student. The processes by which it is determined whether the learner has achieved that standard can collectively be called *evaluation*, whether it consists of direct or indirect observations, reports of activities, or formal testing. In clinical medical education, there are 2 main ways that evaluation occurs: formal tests of knowledge and decision making (examinations) and evaluation of performance by clinical supervisors. The latter typically occurs at regular intervals during training and should be specific for each clinical experience. Because the evaluation forms the basis of a pass/fail decision, it is primarily a summative process. The differences between feedback and

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assessment are theoretically quite distinct, but in the real world, there often is overlap between the two because it is arguably impossible to provide feedback that is completely devoid of judgment. Because the purposes of feedback and evaluation are not entirely aligned, it is important to recognize when you are carrying out one or the other activity—both are necessary at different stages of the educational process. The evaluation of the learner that occurs at the end of a clinical rotation may paradoxically partially account for the problem observed by Ende, which is the paucity of feedback. The process may be assumed by some (maybe by most) teachers to be an adequate feedback mechanism.¹ However, given that it occurs at the end of a clinical assignment several months in duration and has a high-stakes component (pass/fail), the environment is not optimal for learning. When surveyed about the quantity and quality of feedback they receive about their clinical performance, most trainees indicate that it is inadequate in both respects.³ The reality would appear to be that, although clinical teachers may believe they are providing effective feedback, the learners have a very different perspective.

Self-Assessment, Feedback, and Reflection

An important, parallel principle associated with effective feedback is the ability of the learner to assess his or her personal performance and determine knowledge gaps. The capability to carry out self-assessment was described by Knowles⁴ in his seminal book *The Adult Learner: A Neglected Species*. One of the central assumptions in his theory of adult learning is that, as we mature, we develop the ability to direct our own learning to meet our individual needs, which are determined by our unique environment. In the professional context, this principle assumes that a surgeon will seek to learn new and better surgical techniques in his or her field, whereas another specialist would be interested in a different domain to improve skills and knowledge. Indeed, according to the systematic review conducted by Murad and colleagues,⁵ there is good evidence that self-directed learning in the health professions is more effective than traditional methods in the knowledge domain and at least as effective in the domains of skills and attitudes.

However, as Norman⁶ pointed out in his entertaining essay “The Adult Learner: A Mythical Species,” there is a significant problem with this underlying assumption of adult learning, and it can be summarized by one word: *insight*. If we are to be successful at self-assessment of our learning needs, we have to be able to identify our own inadequacies as a prerequisite to filling the gaps. Nonetheless, Norman⁶ explains:

[W]e’re all human, adult or not, and it is part of the human condition to suppress our inadequacies, to both ourselves and others. Further, while it would be nice if we could trust folks to seek out education to redress their deficiencies, people generally like the reward that comes from success, and left to their own devices gravitate to studying things they enjoy and are already pretty good at.

A systematic review on the topic asked the question: how accurately do physicians self-assess compared with external observations of their competence?⁷ That query found 17 articles that addressed the question, involving 20 separate comparisons. Seven (35%) found a positive relationship, that is, the physicians and external observers agreed. Even more concerning was their finding that self-assessment skills were least developed in 2 groups, which are not mutually exclusive:

1. Those assessed by external sources to be the least competent.
2. Those who were most confident.

In a profession where competence is so crucial to performance and clinical outcomes, these findings clearly indicate that self-assessment cannot be the only or indeed even the main means to determine learning needs, particularly for the “rookie,” who by definition will fall into the first category listed above.

The inability to accurately self-assess is by no means limited to the inexperienced and/or overconfident. Indeed, most people believe their personal capability to self-assess is above average.⁸ The reasons for this lack of insight are likely multiple and have been summarized into 3 categories by Eva and Regehr⁹:

There are cognitive reasons (information neglect and memory biases), sociobiological reasons (it being adaptive to maintain an optimistic outlook), and social reasons (not always receiving adequate feedback from peers and supervisors) that render the task of generating accurate summative assessments of one’s own level of performance or ability particularly challenging.

They go on to state “the conclusion that humans do not self-assess well... should in no way imply that reflection on performance is a useless exercise.”⁹ Rather, it probably should be considered an entry point into the education process, but not the main means by which we determine our learning needs.

The concept of self assessment is closely associated with the process of reflection. As summarized by Mann et al,¹⁰ “there appears to be a dynamic relationship between reflective practice and self-assessment, both explicitly and implicitly. The ability to self-assess depends upon the ability to reflect effectively on one’s own practice, while the ability to reflect effectively requires accurate

self-assessment.” It is, therefore, worthwhile to teach students how to reflect on what they have learned, particularly as it relates to clinical events, that is, to understand the “why” of the “what,” so that this information can be applied to the process of self-assessment, while recognizing the importance of external input to help with the latter. These points regarding self-assessment and reflection provide arguments for external sources of information as mandatory components in both processes. If reflective capacity is “an essential characteristic for professional competence,”¹⁰ then, feedback from teachers and other learners is a critical step in the process, given the human tendency toward inaccurate self-assessment.

Evidence in Support of Providing Feedback on Clinical Performance

A systematic review of the literature by Veloski and colleagues¹¹ examined the effect of feedback to physicians on subsequent clinical performance. The authors reviewed 3702 published articles and ultimately selected 41 that met the inclusion criteria, which were studies that included a baseline assessment of clinical performance, followed by feedback, and subsequent measurement of clinical performance. A number of studies were rejected for analysis because it was not possible to account for the effects of other variables, such as type of education, use of reminders, and inclusion of nonphysician learners. They found that 74% of the included studies demonstrated a positive effect of feedback on physician clinical performance. This was strongly associated with 2 factors:

1. The feedback was from an authoritative (respected) source, such as a clinical supervisor.
2. The process occurred over an extended period of time, generally at least 2 years.

Interestingly, some characteristics of the feedback did not appear to have measurable effects on physician performance. These factors included the extent to which the participants were involved in designing the feedback system, whether the individual was compared with some type of professional standard, the detail of the feedback, whether the feedback was provided verbally or in written format, and whether the reports of the physicians’ performance were made public.

An essential prerequisite to providing effective feedback is that performance must be observed, so that real examples of desirable and undesirable behaviors can be provided to the learner. The lack of direct observation of learners by supervisors in the clinical setting was identified as a major impediment by Ende¹ and continues to be a significant obstacle.^{3,12} As stated by Ende,¹ “Observations are the

currency of feedback and without them the process becomes ‘feedback’ in name only.” In the context of medical education, the people who are best positioned to provide useful feedback to the learners are those individuals who directly supervise their clinical activities, and they should be the target audience of any educational effort to improve the process of giving feedback.

With the increasing use of simulation models in teaching clinical skills and the opportunities to build automated feedback into those tools, it might be assumed that feedback from an actual human could become less important.¹³ However, this was not the conclusion reached by Porte and colleagues,¹⁴ when they studied this question. They found that, even for a very specific motor skill, the most effective form of feedback, defined as leading to sustained improvements in technical skills, was from an expert instructor. Interestingly, automated feedback did result in improvement of the specific skill, but only temporarily. No other form of feedback was as effective as that from an experienced surgeon who had observed the learner’s behavior and provided immediate comments.

The positive influence of feedback may be more pronounced among new learners than it is among practicing physicians. A *Cochrane Review*¹⁵ of the effects of feedback on clinical performance of the latter group demonstrated only a modest benefit, although it was most pronounced when the baseline adherence to recommended practice was low. These findings indicate that the ideal stage in a medical career to provide feedback is likely during the formative phase, when behaviors are still relatively malleable, that is, during residency training.

Barriers to Effective Feedback

As previously discussed, the first step in providing feedback must be to observe the learner during clinical activities. However, even assuming that this does occur, there are still factors that can sabotage the process. Perhaps the most common pitfall relates to unintended effects that are connected to the tendency of feedback to elicit an emotional reaction. Simply put, feedback about things that have gone well tends to be received as “good,” whereas comments about unsuccessful events will be received as “bad.” The desire to avoid upsetting the learner with “negative” comments can lead to what Ende¹ termed *vanishing feedback*, wherein the following scenario plays out:

[T]he well-intentioned teacher talks around the problem or uses such indirect statements as to obfuscate the message entirely. The student, fearing a negative evaluation, supports and reinforces the teacher’s avoidance. The result is that despite the best of intentions, nothing of any real value gets transmitted or received.

However, this problem is surmountable by ensuring that the learner is enlisted as an ally in the feedback process, that comments are based on behavior that is remediable, and that feedback focuses on decisions and actions rather than on intentions or interpretations, that is, the focus is on what was done, rather than what was presumed to be thought.

Another confounding factor to effective feedback has recently been described as the *millennial generation* issue, the cohort of students currently graduating from medical schools. This generation “has been broadly characterized as being raised with an emphasis on being special; a previous absence of a balanced focus on weakness may present a barrier to accepting the validity of negative feedback.”¹⁶ This problem can be expected to be exacerbated by the human tendency to be poor at self-assessment, as previously discussed, but it can be mitigated by ensuring that the student develops adequate, reflective thinking skills.^{3,10} The ability of the learner to engage in reflection should be integrated into the undergraduate curriculum, so that students will have well-developed skills by the time they reach the clinical learning environment.

Another perceived barrier to providing feedback is time constraints because both learners and teachers are typically under constant pressure to get the clinical and academic work done within a crowded day. The first step is to establish a culture where feedback is expected and desirable as an essential component of effective teaching.¹⁷ Because feedback is most effective if delivered as close to the observed performance as possible, and acknowledging that small doses are desirable, the actual time commitment should become a minor impediment when its value is considered.¹⁸

Guidelines for Giving Feedback

Various authors have provided lists of “do’s and don’ts” related to giving feedback,^{19–21} and they relate back to the original guidelines provided by Ende¹ in his classic paper.

Feedback should

- occur with the teacher and trainee working as allies with common goals
- be well-timed and expected
- be based on first-hand data (observations)
- be limited to behaviors that are remediable
- be phrased in descriptive, nonjudgmental language
- deal with specific performances, not generalizations
- provide subjective data that are clearly identified as such
- deal with decisions and actions, rather than assumed intentions or thoughts.

The first principle to consider in the feedback process is the requirement that both parties be engaged and committed to the activity. This is more likely to occur if there is an understanding of the purpose of feedback (formative, to improve future performance) and recognition that this is different from evaluation (summative, to form the basis of a “mark”).

Eva et al²² recently described a number of factors that influence the receptiveness of learners to feedback: these include confidence, experience, and fear of not appearing knowledgeable. The potential negative effects of these factors can be limited to some extent by providing feedback in a private venue in a nonjudgmental way and keeping the focus on observable, correctable behaviors. Interestingly, they make the point that more is not always better because too much feedback interferes with the natural process of “figuring stuff out,” which is a learning activity that tends to improve long-term proficiency.

Another important consideration is quantity; feedback is best consumed in small portions rather than as a banquet. This concept is explained well by Cantillon and Sargeant¹⁸: “Feedback should be limited to one or two items only. Teachers are often tempted to point out all the faults that have been detected in a student’s performance. However, a torrent of corrective feedback is more likely to overwhelm and demoralize the learner.” Continuing on the food theme, they described the “feedback sandwich,” a technique where the teacher opens the discussion with a positive observation, follows with a corrective suggestion, and ends with a reinforcing positive statement. They proposed a variation on this approach, which they labeled “the reflective feedback conversation,” which itself is really an extension of the Pendleton et al²³ model of providing feedback. Both methods rely on the learner’s interpretation of the event being analyzed, starting with asking learners for their own observations of the particular performance, followed by supportive comments by the teacher and some probing of how the learner might “do it differently” in future, and ending with a mutually agreed plan for improvement.

Presuming acceptance of the evidence that feedback is a useful activity to learners, physician characteristics that are associated with proficiency in feedback skills can be identified and nurtured. A study²⁴ of physicians on faculty at the Johns Hopkins University School of Medicine reported on such characteristics, based on a survey of 299 physicians who completed a survey (82% response rate), with the results compared and used to develop a “feedback scale.” Six behaviors of faculty members were associated with increased proficiency in providing feedback:

- frequently attempting to detect and discuss learners’ emotional responses

B O X . SUMMARY OF THE EVIDENCE: CHARACTERISTICS OF EFFECTIVE FEEDBACK¹⁹

1. Establishment of an appropriate interpersonal climate
2. Use of an appropriate (private) location
3. Establishment of mutually agreed goals
4. Elicitation of the learner's thoughts and feelings
5. Reflection on *observed* behaviors
6. Use of nonjudgmental language
7. Connection of feedback to specific correctable behaviors
8. Provision of the right amount of feedback (not too much)
9. Inclusion of suggestions for improvement

- effective conflict resolution
- asking learners what their education goals are
- documenting personal, professional goals within the prior year
- working with learners to establish mutually agreed upon goals
- allowing learners to figure problems out for themselves

Hewson and Little¹⁹ investigated whether “real world” incidents of feedback in a clinical teaching environment (the Cleveland Clinic) substantiated the literature-based recommended techniques. Their mixed-methods survey of clinician-educators, which is summarized in the B O X , revealed a strong correlation between their findings and the literature recommendations concerning the delivery of effective feedback in a clinical setting.

In summary, feedback is most effective when it is a bilateral process with participation by both the giver and receiver. It is a skill that can be learned, practiced, and improved upon by experience. Our learners deserve to receive it, and our patients will be the ultimate beneficiaries of the process. Using the guidelines provided by the various researchers in this field, we must accept our responsibility as clinical faculty to feed our learners during their critical, formative stage of development; the starvation must end.

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