Chapter 19 The Role of Verbal Feedback in Surgical Education



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Overview This chapter synthesises findings from observational studies of feedback in surgical education and the broader health workplace which illuminate the failure of feedback to do its job in improving trainee performance. Given this state of affairs, we argue for an alternative way of looking at feedback practices in surgical education. The recent frameworks proposed by Boud and Molloy (Assess Eval Higher Educ 38:698–712, 2013), Feedback Mark 1 and Mark 2, reconceptualise feedback as an activity driven by learners rather than an act of 'telling' imposed on learners. Through identifying their own needs, concerns and practice goals, learners are more likely to take on board the strategies raised for improvement. This dialogic form of feedback is more likely to develop self-regulatory capacities in the learner, but this requires displays of vulnerability and establishment of trust between parties. We argue that these dialogic communication strategies, centred around respect, trust and development of 'the other' in terms of reaching their goals, may transfer to surgeons' skills in patient-centred care.

19.1 Introduction

There are different forms of feedback in surgical education, all of which play important roles in improving learner performance. The learner uses haptic feedback to alter angles or force during procedures and responds to written comments on their observed performance such as checklists, scale ratings, or qualitative comments as part of workplace-based assessments. The learner also uses verbal, or oral, feedback from patients, peers and supervisors to help improve subsequent performance on tasks.

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Contemporary literature in surgical education, and broader medical education, points to the importance of the learner-teacher relationship in optimising feedback. The degree of personal trust established, the trust in the assessment/training process itself and the perceived credibility of the teacher all play a role in determining the weight of performance-based information and the likelihood of the learner incorporating changes into practice [2, 3]. The 'educational alliance' [4], building from the notion of therapeutic alliance in psychotherapy, has been described as a potential helpful frame from which to build conditions that support dialogic exchanges. Drawing on this educational alliance and learner-centred feedback literature, this chapter will identify key design features (macro level) that are likely to promote optimal feedback practices in contemporary surgical education. In addition, we will outline the skills (micro level), including prompts, questions and, most importantly, pauses, that may facilitate a learner-centred feedback approach. The following section will describe unique opportunities for feedback in the surgical education context, including advances in simulation and e-learning, as well as highlight problematic aspects of contemporary surgical training that may challenge the enactment of best-practice feedback principles.

19.2 What Does Feedback Look Like in Surgical Education?

19.2.1 Feedback on Performance in Surgical Training

Despite evidence that feedback is important for learning in surgical education [5], verbal (oral) feedback is seen as one of the most challenging aspects of the trainee experience [6, 7]. Learners across medical education complain that they do not receive enough feedback, and when they do, it is difficult to use [7]. Learners report they are exposed to destructive forms of verbal feedback that can have a negative bearing on immediate learning outcomes and have longer-lasting effects on career [8]. Likewise, educators often anticipate the emotional impact of their feedback on colleagues or trainees and can approach these encounters with trepidation [2]. The feedback 'conversation' often takes the form of a supervisor monologue, albeit a 'mealy mouthed' version of what they really wanted to say to improve trainee performance. Both parties report wearing their 'thickest skin' in the hope that they will get through the feedback encounter with minimal scarring [9]. More specifically, surgical education typically takes place in a complex and high stress context, relative to other settings in medical education [10]. In theatre, there are multiple team members negotiating multiple functions, there is often limited time, interruptions and distraction, and the consequences of making mistakes are high. Feedback may be provided 'on the run' while trainees are performing a procedure or may occur retrospectively, in an informal sense, in between cases or at the end of a day of operating.

Verbal feedback is an essential, but not always utilised component of work-based assessment in surgical training world-wide. Chapters 20 and 21 outline the key approaches of both formative and summative assessment in the workplace, and in both these high and low stakes assessment approaches, feedback is a fundamental

ingredient designed to drive trainee improvement. Multisource, or 360 degree, feedback is an increasingly accepted and validated approach to feedback where information from external sources including supervisors, patients and peers is viewed as key to the development of learners [8, 11]. Feedback from multiple sources has been reported to provide learners with a more complete picture of their performance/ behaviours, and this 'triangulated viewpoint' can be particularly important given the reported low reliability of self-assessment [12, 13].

Feedback is not limited to face-to-face human encounters. Technology, in the form of high-fidelity simulation, is commonly used in surgical education and may be used to provide performance information to learners. Innovative approaches to feedback have incorporated technology-mediated feedback with multisource feedback. For example, Nestel et al. [5] incorporate the Integrated Procedural Performance Instrument (IPPI) in patient-focussed simulations (a hybrid simulation including simulated patients and part-task trainers) with multiple sources of verbal and written feedback. Learners are videoed completing a scenario, and this audiovisual capture and the independent judgements from clinical assessor, learner and simulated patient are collated and provided to the learner to inform decisions about learning and future performance [5]. Audio-visual capture via Google Glass is another mechanism used to support learner self-evaluation and the feedback conversation between educator and learner by providing visual evidence of performance [14]. As these examples demonstrate, there are many ways in which feedback can be sought and used in surgical education to benefit the learner. Although trainees and surgeons are encouraged to seek feedback from multiple sources, including from video recordings, simulators, patients and peers, the 'weight' or credibility they ascribe to the 'source of the feedback' will affect how they hear and use the information [3, 15]. Technology might be seen as a means to gather information about performance, but conversations about performance, including strategies for improvement, are still crucial for consolidation and advancement of learning.

19.2.2 Problematic Aspects of Feedback in Surgical Education

19.2.2.1 Changing Nature of Surgical Education: Knowing the Trainee

The stresses inherent in surgical education are well documented [16, 17], and the role of supervision can add to these demands in the workplace. With more trainees in the health care system, it is challenging for supervisors to make assumptions about learners' prior educational experiences and skill levels. This can make task selection more challenging, as well as decision-making relating to how much direct supervision is required [18]. Shorter rotations also make it harder for supervisors to get to know the trainee and therefore tailor feedback to their needs. A recent study by Ong, Dodds and Nestel [19] highlighted that surgical trainees are not only learning new technical skills but are navigating case variability, operating team interactions and environmental cues and case scheduling, all of which affect learning and performance.

19.2.2.2 Feedback Should Be Based on Observed Behaviours But Often It Comes Second Hand

The continuity of the supervisory relationship is being increasingly threatened in postgraduate medical education. Often a learner has multiple supervisors, and often the 'supervisor of training' responsible for feedback delivery or progress decisions has not had many occasions of direct observation of the trainee in practice [20]. This means in feedback conversations that it can be difficult for the supervisors to answer learner's questions relating to the feedback or to provide examples of behaviour.

19.2.2.3 Diagnostics Without Strategies

Studies in both surgical education and medical education reveal that feedback information is focused on learner deficits rather than on strategies to improve performance (supervisor derived or collaboratively derived) [6, 7, 21]. Although tools have been developed that encourage planning for improvement such as the SHARP tool 5-step feedback tool for surgery [22], many feedback conversations in practice involve the identification of problems, without strategies to address deficits. This is unlikely to result in positive changes in the learner's next attempt at a similar task [9]. In other words, the 'feedforward' is often lacking.

19.2.2.4 Feedback Is Taken Personally, Despite Best Intentions

Even if delivered skilfully with a behavioural focus, information that serves to highlight how performance can be improved (developmental aim) can still be interpreted as overly 'critical'. The feedback can be taken personally by the learner if they are highly invested in the work [2]. As reported by Boud and Molloy [21], 'learners care about their work and they care about how it will be judged' (p. 1).

19.2.2.5 Inherent Tension Between Learning and Assessment in Workplace Training

Feedback should be about learner improvement, and many models of feedback encourage learners to articulate their deficits in practice (e.g. questions such as what would you do differently next time? What didn't go well?). The tension for learners in surgical education is that their mentors/senior colleagues are often also responsible for summatively assessing their performance. That is, supervisors often have a gatekeeping as well as a mentoring/developmental role. Learners, when self-evaluating their performance, are much less likely to expose their deficits to an assessor compared with a feedback conversation with a peer or a mentor. Training in medical specialty colleges does not often inspire exposure of deficits, and learners and supervisors need to work together to establish a climate of trust to facilitate honest, helpful performance discussions [20].

19.2.2.6 Intersection Between Bullying and Feedback

Unfortunately, poor interactions between trainees and supervisors of training have attracted widespread attention in recent years. The intersection between feedback and bullying in surgical education and the mistreatment of medical trainees is not a new phenomenon, with reported issues in medical education since the 1990s [23]. In Australia in 2015, the Royal Australasian College of Surgeons (RACS) established an Expert Advisory Group (EAG) to provide advice on strategies to prevent discrimination, bullying and sexual harassment in the practice of surgery in Australian and New Zealand hospitals and in the College [24]. The EAG produced three key areas for action to help change this culture, one of which focuses on surgical education. RACS set forth to improve the capability of all surgeons involved in education to provide effective surgical education based on the principles of respect, transparency and professionalism [25]. One specific goal is to 'equip all surgical educators and supervisors to teach and provide constructive clear and timely feedback' (goal 2.4). The next two sections highlight concepts of feedback design and the educational alliance as a means of 'equipping' educators to move towards achieving this goal.

19.3 Emerging Models of Feedback

19.3.1 Feedback Mark 1 and 2

Conceptions of feedback as a practice have started to broaden in higher and professional education. A more recent definition of feedback [18], built on constructivist principles, is:

Feedback is a process whereby learners obtain information about their work in order to appreciate the similarities and differences between the appropriate standards for any given work, and the qualities of the work itself, in order to generate improved work

Some defining characteristics that emerge from this broader notion of feedback are that feedback is not a single act but rather a *process* that evolves over time and learners are positioned as *agents* who seek the information for their own purposes (rather than recipients of 'news') and that a necessary element of feedback is that the information is *used* to generate new work or behaviour. In essence, this definition of feedback reframes the notion of the practice of feedback (input) around the effects on learners (output). This notion, known as Feedback Mark 1, is not a new one but rather signals a return to the roots of feedback in engineering and biology where the input in the system results in an output [18]. Feedback based on this approach challenges workplace learning cultures where there are established patterns of 'learning as apprenticeship' with accompanying feedback rituals resembling experts telling apprentices what is going right and what is going wrong [7].

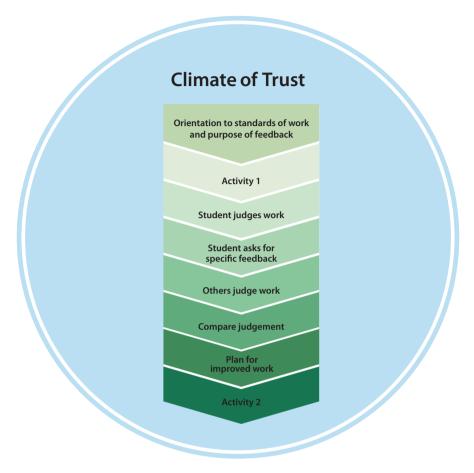


Fig. 19.1 Feedback Mark 2 in the workplace context. (Based on Boud and Molloy [1] Fig. 2.4)

Feedback Mark 2 as represented in Fig. 19.1 acknowledges that humans have volition and that they may respond differently to the same stimulus (e.g. performance information) based on their circumstance, preferences, prior experience, values and knowledge. The model privileges (1) priming of both trainee and supervisor in terms of what occurs before the task and production of commentary on performance, (2) what occurs in the 'instance' of communication about performance and (3) what occurs subsequent to the exchange, the most important facet being an opportunity to put new behavioural strategies into practice.

Traditionally, the mechanism described as item 2 (the instance of communication post performance) is deemed to be feedback. Feedback Mark 2 acknowledges that the designing of tasks and cues before, during and after performance (or production of work) is integral to the feedback process.

19.3.2 Enacting Feedback Mark 1 and 2 in Surgical Education: What Does This Mean for Learners and Supervisors?

In order for learners and supervisors to take up more productive feedback practices, the following processes are recommended:

- 1. Orientating both parties to the purpose of feedback, this includes signposting that the 'traditional feedback ritual' is going to be challenged.
- 2. Purposeful design of tasks on placement, e.g. workplace-based assessments, cases with overlapping tasks, i.e. similar surgical techniques required so that strategies for change can be enacted and monitored for degree of success.
- 3. Supervisor probing learner for 'what should I look for in your performance?', i.e. during the scrubbing process, prior to a surgical procedure, the learner primes the supervisor for aspects of practice that they feel need improvement, similar to the first step in the SHARP tool, which explores learning objectives a priori [22].
- 4. Sending invitations for learner self-evaluation [6, 26]. This includes pausing for learner responses and potentially following up with more detailed probing for information if the learner deflects self-evaluation.
- 5. Following the learner self-evaluation with supervisor commentary to validate or challenge the learner's perspective (encouraging development of learner evaluative judgement [27]).

This form of feedback practice has two clear, and mutually informing, aims. The first is to improve performance on task at hand, and the second is to help generate a self-regulating practitioner who seeks information about their performance from the environment (instruments, video, patients, peers and teachers) in an effort to internalise standards for their future practice. These strategies can be enacted across the spectrum of surgical education contexts including the operating theatre, hospital ward and the outpatient setting.

19.4 Feedback for Learners and Feedback for Patients: What Are the Parallels?

19.4.1 Parallels in Surgical Education and Surgical Consultation

The parallel between educational and therapeutic practice has been drawn elsewhere in medical education literature with Molloy [6] drawing comparisons between patient-centred practice and learner-centred education in an observational study of verbal feedback in the workplace. Similarly, Sommer et al. [28] have used a familiar patient-centred communication skills teaching model (Calgary Cambridge Guides)

to highlight the parallel between doctor-patient communication and educator-learner communication. Both these studies have suggested that clinicians' skills in patient-centred communication could be translated to learner-centred conversations on performance (feedback/teaching) and vice versa. We have considered these corresponding principles and present the parallel between Feedback Mark 2 with patient-centred consultation (see Table 19.1).

 Table 19.1
 Distinguishing features of Feedback Mark 2 and patient-centred communication

	Features of feedback mark 2	What might this look like?	Corresponding feature in patient-centred consultation	What might this look like?
A	Orientation to standards of work and purpose of feedback	Explicitly outlining to a trainee the standards they are expected to perform to and that the purpose of feedback is improved performance	Orient the patient to the expectations and the purpose of the consultation interaction	Introduce self and other members of the health care team. Outline roles and the goal for the consultation
В	Learner judges their own work	Trainee evaluates own performance of work. Build trainee engagement in self-evaluation	Patient makes judgement on own situation	Invite the patient's perspective on situation
C	Learner asks for specific feedback on their work that matters to them most	Trainee seeks specific feedback about performance (e.g. a technical procedure or the flow of his/her history taking effort)	Patient asks surgeon for specific information on their situation that matters to them most	Patient enquires about surgical and non-surgical options based on their perspective or asks about time frames (e.g. 'Will I be walking in time for my son's wedding in June?')
D	Others judge work	Surgical educator judges the trainee's performance on the task	Surgeon judges the situation	Surgeon takes in all appropriate information and makes a judgement on the situation
Е	Compare judgements	Creation of channels for dialogic discussion of judgements	Surgeon and patient compare judgements	Compare patient's perspective with surgeon's perspective
F	Generate plan for improved work	Collaborative development of a plan for improved work, clear strategies and time frames	Surgeon and patient make a plan to improve the situation including strategies and time frames	A shared decision is made for the next steps in the patient's journey (i.e. surgical pathway)
G	Implementation of strategies in subsequent tasks	Scheduling of future opportunities (e.g. additional case, simulation in clinical skills for the learner to improve work	Implement the plan and reassess situation	Plan is made to schedule future appointments, interventions or referrals to improve patient's health

The Feedback Mark 2 model shares many similarities with key tenets of patientcentred care [29]: the exploration of the learner/patient goals and perspectives, the sharing of information with the learner/patient and collaboration to generate a plan for the future (e.g. improved performance, improved health). *Patient*-centredness is a requirement of registered doctors, proposed in many codes of practice. Developing these skills in learner-centred feedback conversations may facilitate educators' internalisation of this approach to feedback in the surgical setting. The benefits of learner-centred feedback are likely to be threefold. Firstly, by the learners identifying their own needs, concerns and practice goals, they are more likely to take on board the strategies raised for performance improvement. Secondly, the selfidentification of deficits in performance has the potential to diffuse the emotional sting of educator-delivered feedback so commonly reported in the literature. Thirdly, this dialogical form of feedback puts the trainee in the position of self-regulator. By committing to self-evaluation, and then receiving comments that validate, challenge or build on their evaluation, trainees are given the opportunity to develop skills of professional judgement [27].

Challenges to this type of health care or education dialogue also exist. For example, when invited to share their own opinion, there are many contextual factors that impede patients from doing so. Likewise, in feedback conversations, it can be difficult for our learners to highlight their 'main concern' or aspect of their performance they would most like comment on. This phase requires both learner and patient to expose some vulnerability to the surgeon; the success of this phases hinges on overcoming this vulnerability. This may involve the educator/clinician taking time to pause and allowing the learner/patient to share their perspective [6]. This moment of space is often avoided with educators/clinicians jumping to Step D in Table 19.1 – offering judgement on the situation [7].

In an observational study of feedback [6], we found that educators often asked for the learners' perspective in a tokenistic manner, hoping they would 'be swift in their appraisal' so they educator could 'tell' the student their own thoughts on the situation. Similarly, communication skills teaching emphasises the seeking of the patient's perspective, because in practice this does not readily occur. Patients and clinicians may leave consultations with differing perceptions of the interaction, with clinicians thinking they have said things and their patients thinking differently. In a study that surveyed both surgical residents and faculty members, Jensen and colleagues [30] found a dissonance between perceptions of feedback provision with faculty members more likely to believe that they had delivered quality feedback than the residents in the study and mirrors findings published elsewhere [7]. This lack of opportunity to compare judgements and collaboratively plan for the 'where to next' impacts the quality of a feedback and patient care conversations [18, 31].

19.4.2 Educational Alliance and Empowering Trainees

Just as patients form a therapeutic alliance with their surgeon, trainees could be seen to form an 'educational alliance' with their supervisor [15]. Telio et al. [15] position feedback as a 'social negotiation enacted in the context of a relationship' (p. 934). The Educational Alliance as a framework for feedback relies on the quality of the relationship and the collaboration of both parties and is key to successful feedback interactions in surgical education [32]. The patient-centred care movement has pushed for the empowerment of care seekers. Within this relationship agency is shared, power is shared and the interaction represents a dialogue rather than a monologue. Telio et al. [4] emphasise the importance of a feedback dialogue involving two active parties. Active participation of the patient/learner is a key tenet of health care/education. Moving away from a feedback process based on telling, or transmitting information to the learner, Mark 2 and the Educational Alliance advocate for a collaborative discussion of learners' performance. Although this prospect may appear daunting to some, particularly given the current climate of short rotations and multiple supervisors working with trainees [33], evidence is building for a change in how feedback is viewed, and enacted [4]. Systems and processes will need to be adapted for this new conceptualisation of feedback to be adopted [34]. To challenge the historical methods of feedback in surgical education, not only do educators need to equip themselves with feedback skills but need to create an environment to empower trainees to be active in these conversations. Professional development of both parties (feedback theory and practice) and assessment structures that allow for iterative task attempts and formative feedback conversations will be important steps in this cultural change.

19.5 Conclusion (and Feedforward)

Feedback in surgical education is challenging for both learners and educators, and the time is ripe for a revolution in feedback practice. This chapter presents an alternative way of conceiving feedback where the learner actively seeks information about specific aspects of their performance and is encouraged to make sense of internal and external judgements, in order to plan for performance on future tasks. We propose that practices informed by the model of Feedback Mark 2 may have the potential to generate more productive outcomes for surgical trainees and colleagues and that these communication strategies may transfer into patient-centred care. Although perhaps a less familiar discourse in surgical education, the authors wish to reconceptualise feedback as a process that is mutually constructed rather than 'provided' and 'accepted'.

An important step in feedback research is to evaluate the effect of training of both learner and educator in 'collaborative feedback' on performance outcomes. The other key research direction is to investigate how the dedicated training in learner-centred feedback impacts on surgeons' mode of communication with other stakeholders-patients, peers and managers within the complex ecology that is the health care system.

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