Feedback Redefined

Feedback Redefined: Principles and Practice

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Feedback is defined as a regulatory mechanism where the effect of an action is fed back to modify and improve future action. In medical education, newer conceptualizations of feedback place the learner at the center of the feedback loop and emphasize learner engagement in the entire process. But, learners reject feedback if they doubt its credibility or it conflicts with their self-assessment. Therefore, attention has turned to sociocultural factors that influence feedback-seeking, acceptance, and incorporation into performance. Understanding and application of specific aspects of psychosocial theories could help in designing initiatives that enhance the effect of feedback on learning and growth. In the end, the quality and impact of feedback should be measured by its influence on recipient behavior change, professional growth, and quality of patient care and not the skills of the feedback provider. Our objective is to compare and contrast older and newer definitions of feedback, explore existing feedback models, and highlight principles of relevant psychosocial theories applicable to feedback initiatives. Finally, we aim to apply principles from patient safety initiatives to emphasize a safe and just culture within which feedback conversations occur so that weaknesses are as readily acknowledged and addressed as strengths.

KEY WORDS: feedback; residency education; feedback culture; sociocultural theory; feedback credibility.

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The term "feedback" has its origin in mechanical environments and refers to an auto-regulatory mechanism where the effect of an action is fed back to modify future action. Based on whether the gap between actual and desired performance is narrowing or widening, the type of feedback is referred to as positive or negative feedback respectively. The term is now used in various professions in the context of performance appraisal and practice improvement. Once dominated by expert opinions and recommendations,[1, 2] feedback in medical education has shifted its attention to feedback provider-recipient relationships and factors that promote acceptance and incorporation.[3–5] In this perspective, we compare and contrast older and newer definitions of feedback, explore feedback practices and models used in medical education, and review tenets of relevant psychosocial theories applicable to the design of impact-enhancing feedback initiatives.

FEEDBACK: A VITAL COG IN THE WHEEL OF COMPETENCY-BASED MEDICAL EDUCATION

In the era of competency-based medical education, formative performance-based feedback is essential for learners to calibrate their performance and formulate action plans to narrow the gap between their current and expected performance.[6–10] In several studies, medical students and residents report that faculty feedback is infrequently provided and vague language has little impact on their performance.[4, 11–13] Clinical teachers report several barriers including lack of time and space for direct observation and feedback, lack of feedback skills, and concerns that "negative" feedback would damage teacher-learner relationships.[14–17] Tackling complex barriers related to interpersonal relationships or institutional culture demands understanding of these factors.[18–20]

TRADITIONAL DEFINITIONS AND MODELS

Older definitions of feedback emphasize teachers' skills in providing feedback, a mostly unidirectional model for feedback conversations. Ende defined feedback in medical education as "information describing students or house officers' performance in a given activity that is intended to guide their future performance in the same activity."[1] The "feedback sandwich" model, which recommends starting and ending with positive feedback, interposed by negative feedback,[21] has not been shown to improve learner performance.[22] The Pendleton model features four key steps: learner self-assessment of strengths, teacher agreement/disagreement, learner assessment of deficiencies, and teacher agreement/disagreement.[23] However, most older definitions and models have not adequately showcased learner engagement in the conversation or their role in creating a road map for performance improvement. It had been assumed that improving teachers' feedback skills would somehow lead learners to change practice and improve performance (Fig. 1).

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Recent research suggests that teachers' perceptions of effective feedback may not be shared by learners, and teachers are largely unaware of when and why learners reject feedback.[24–27] In Graduate Medical Education settings, residents are the first-line providers of patient care and it is important to preserve their self-esteem and autonomy during feedback conversations. Such settings warrant a learner-focused model with learners as active seekers of feedback and contributors to the conversation rather than passive recipients.[4, 28] Short working relationships pose an additional barrier to learner-centered feedback approaches, yet, such approaches may be needed to promote behavior change. Therefore, the landscape of feedback needs to shift from teachers' feedback techniques to learners' goals, acceptance, and assimilation of feedback, regardless of the duration of working and learning relationships. To do this effectively, key factors that influence feedback acceptance need to be analyzed and understood.

FEEDBACK THROUGH A SOCIOCULTURAL LENS

Newer definitions of feedback emphasize its impact on recipients; until learners act on feedback, the feedback loop remains incomplete.[3, 8, 9, 29, 30] However, learners reject constructive feedback, namely feedback on deficiencies or areas for improvement, if the process or provider lack credibility in their eyes.[16, 31–33] Credibility is influenced by factors such as learner-teacher relationships, the manner of delivery, perceived intentions of feedback providers, direct observation of performance, congruence of data with self-assessment, and perceived threat to self-esteem or autonomy.[17, 27, 30, 34–37] Two recent feedback models, the R2C2 model (relationships, reaction, content, and coaching) and the educational alliance model, place learners at the center of a feedback conversation and prioritize learner-teacher relationships as precursors to feedback conversations that target change in learner behavior and practice.[38–42] Institutions need to promote trusting teacher-trainee relationships within a safe learning environment and facilitate regular direct observation of performance to enable meaningful feedback exchanges.[4, 19]

The feedback encounter is a complex exchange of information influenced by many factors such as the stress of the clinical environment, time pressures, emotional reactions, interpersonal tensions, and the learning culture.[15, 16, 18] Although clinical supervisors are aware that feedback is intended to improve trainee performance, many struggle to provide constructive feedback as they do not wish to be seen as unkind, and wish to preserve self-esteem of and their relationship with trainees.[16, 17, 19] Sociocultural factors that influence feedback can be examined through different viewpoints: the recipient, the provider, and the context. Figure 2 is a depiction of a central role for learners' performance improvement in the feedback loop, influenced by factors related to feedback providers, recipients, and the institutional context.

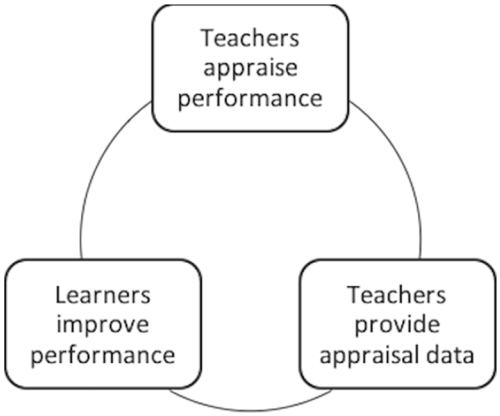

Figure 1 Older definitions and models of feedback in medical education are unidirectional with the direction of flow from teachers to learners. Learners' performance improvement is assumed, and learning opportunities are not consistently created to allow for or document behavior change.

Feedback Recipients

Feedback models which cast learners as passive recipients are likely to be ineffective in graduate medical education; advanced trainees need to actively engage in appraisal of their practice.[43] Feedback acceptance is influenced by feedback-seeking behaviors, ability to self-assess, and perceptions of threat to self-esteem.[30, 44, 45] Goal-orientation of learners may also have a strong impact on feedback-seeking and acceptance.[4, 43, 46, 47] Individuals with a performance goal-orientation seek feedback to showcase excellence and receive positive judgements;[48, 49] they tend to reject feedback perceived as negative or threatening to their self-esteem.[19, 37] Those with a learning goal-orientation focus on mastery of tasks and professional growth.[48, 49] Institutions and teachers can promote a learning goal-orientation by emphasizing mastery of new knowledge and skills rather than appearance of excellence, normalizing areas for improvement, and communicating explicit messages that constructive feedback is necessary for performance improvement.

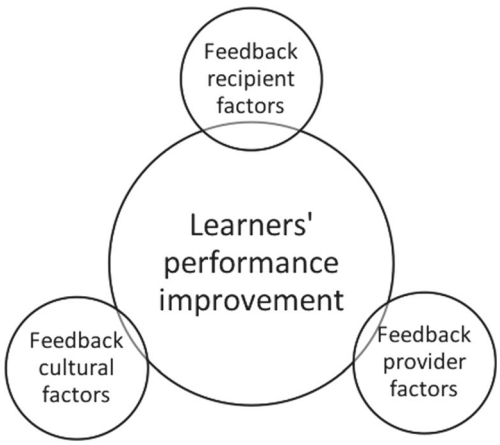

Figure 2 Sociocultural influences of feedback can be feedback provider related (teachers), feedback recipient related (learners), and feedback culture related (institutional). Learner-centered models of feedback emphasize the central position of learners in the feedback conversation with performance improvement as the end goal.

Feedback Providers

Medical education has historically focused on teachers' skills in "providing" feedback to learners.[1, 2, 50, 51] Its impact on learner behavior will likely be enhanced if feedback initiatives enhance teachers' skills in promoting a positive learning climate, establishing rapport with learners, focusing on goal-directed feedback and action plans for performance improvement.[30, 34, 52] It is essential that clinical teachers observe segments of their learners' performance in a variety of domains, debrief observations in a timely manner, and provide opportunities for learners to implement action plans. Finally, it is important for teachers to encourage learner self-assessment and reflection to discuss both strengths and areas that need improvement.

Feedback Culture

A strong feedback culture promotes ongoing formal and informal feedback targeting continuous performance improvement.[53, 54] Educational institutions can establish such a culture by facilitating trusting relationships between teachers and learners, building in time and space for feedback even in busy clinical settings and creating a shared understanding between teachers and learners about the process and content of feedback.[16, 19, 55–57] More research is needed to explore how institutional culture can influence the quality and impact of feedback, feedback-seeking, acceptance, and performance improvement.[5, 39, 41, 42] Understanding sociocultural factors in various learning and work environments is essential before designing initiatives to promote meaningful feedback exchanges and enhance its impact on behavior change and professional development.

THEORETICAL PRINCIPLES RELEVANT TO ENHANCING THE IMPACT OF FEEDBACK

Since recent research has described feedback as a complex interpersonal encounter with relationships playing an important role in learner acceptance and behavior change,[4, 12, 18] it would be useful to explore sociocultural factors that impact feedback.[3, 8, 15, 19, 27, 41] Specifically, concepts from three psychosocial theories are relevant to the sociocultural aspects of feedback: (1) sociocultural theory,[58] (2) politeness theory,[59] and (3) self-determination theory (Table 1).[60] The theories highlight core principles that can guide development of new models and enhance techniques for effective feedback conversations, especially in clinical settings where learning occurs on teams. These principles include relatedness/relationships, self-efficacy, autonomy, and intrinsic motivation for continuous performance improvement and are described in more detail below.

Sociocultural theory, which proposes that humans learn largely through social interactions influenced by cultural beliefs and attitudes, grew from the work of Vygotksy.[61] Drawing upon this theory, Lave and Wenger describe that individuals transform through participation in communities of practice.[58] As learners assume increasing responsibility for their activities, they move from the periphery to the center of a community. Since clinical learning occurs through team interactions and collaboration, institutions should attend to the broader community in which learning is occurring as well as development of individual learners within these communities. Applying these principles to feedback, educators need to (a) identify learner abilities using a developmental approach, (b) calibrate gaps in learners' current versus expected performance, and (c) provide formative feedback to guide independent practice.

Concepts from Brown and Levinson's politeness theory are relevant to feedback conversations. This theory, from the field of linguistic pragmatics, proposes that two types of "face," positive and negative, play a role in most social interactions.[59, 62] The positive face reflects an individual's need to be appreciated by others, and the negative face reflects an individual's need for freedom of action. The clinical environment is characterized by interpersonal relationships between teachers and learners, and multiple team members. In such settings, constructive feedback may be perceived as "negative" and thus a breach of the norms of expected politeness. Honest constructive feedback is essential for longitudinal growth as self-affirmation alone is not the path to professional improvement. However, clinical teachers tend to emphasize positive performance during feedback exchanges to avoid damaging teacher-learner relationships and learner self-esteem.[15, 31] Thus, a polite or face-saving learning culture may have a negative impact on feedback conversations, an area that warrants further research.[63]

Self-determination theory, described by Ryan and Deci, states that human beings tend to regulate behaviors autonomously, take on challenges, and learn through intrinsic rather than extrinsic motivation.[60] Extrinsic motivation is driven by external factors with the goal of achieving defined outcomes.[60] Intrinsically motivated individuals take on activities for inherent satisfaction rather than to achieve a given result.[60] We propose that intrinsic motivation would positively influence feedback-seeking, acceptance, and assimilation, therefore performance improvement. Ten Cate et al. suggest approaches to boost intrinsic motivation during feedback conversations: shifting the focus from the individual to the context; shifting from instructional messages to self-regulation; and shifting the focus from the perspective of feedback providers to recipients.[64]

WHERE DO WE GO FROM HERE?

Based on evolving acknowledgement that feedback is a learner-centered and sociocultural phenomenon, it is important to swing the pendulum of feedback research and faculty

Table 1 Three Relevant Psychosocial Theories, Core Principles that Could Enhance the Impact of Feedback, and Corresponding Strategies to Address Those Principles

Relevant psychosocial theory	Core principles	Implications for feedback strategies
Sociocultural theory	Learning through social interactions Transformation through communities of practice Community influenced by cultural beliefs and assumptions	Educators: - Identify learner abilities using a developmental approach - Calibrate gaps in learners' current versus expected performance - Provide formative feedback to guide independent practice - Use coaching skills for learner growth Institutions: - Provide a safe and just team culture - Establish trusting teacher-learner working relationships - Encourage communities of practice on clinical teams and in training programs
Politeness theory	Self-efficacy/self-image Autonomy/freedom from imposition by others	Educators: - Initiate feedback conversations with previous examples of excellence - Obtain learner goals and engage in goal-directed feedback - Facilitate learner reflections to calibrate gap between current performance and expected performance - Co-create action plans for improvement and future learning opportunities - Focus on professional growth and patient care outcomes Institutions: - Facilitate teacher-learner relationships - Encourage direct observation of performance - Train teachers to provide constructive feedback based on observed behaviors - Orient learners to seek feedback and train them to accept feedback and incorporate into performance - Establish an environment of gradual, increasing, and appropriate autonomy for learners - Shift from performance to learning goal-orientation
Social determinant theory	Autonomy Relatedness Intrinsic motivation	Educators: - Shift the focus from the individual to the context - Shift from instructional messages to self-regulation - Shift the focus from the perspective of feedback providers to recipients - Direct observation of performance - Encourage self-reflection and self-assessment - Challenge learners in a supportive environment Institutions: - Establish a safe and just culture - Set expectations for ongoing formative feedback - Encourage continuous improvement mindset - Stimulate learning goal-orientation - Emphasize excellence and safety in patient care

development from teacher techniques to learner outcomes. Medical educators should examine what institutional cultural factors influence the quality and impact of feedback conversations at their own institutions from multiple perspectives. Observational studies are necessary to examine teacher and learner behaviors during feedback conversations and explore whether intentions of speakers match the perceptions of receivers. Co-construction of feedback conversations, action plans for improvement, and new learning opportunities by teachers and learners are more likely to result in professional growth.[39, 42] Finally, the most credible feedback on clinical performance might be from patients to fulfill the ultimate goal of high-quality and safe patient care. Integration of patient feedback into performance assessment is fraught with challenges, but if implemented effectively, it could trigger meaningful behavior change and enhance safety and quality in patient care.[65] More research is needed in this important area.

Applying principles from patient safety initiatives, we propose that educational institutions adopt a fair and just culture within which feedback is exchanged. Such an organizational culture ensures learning and continuous improvement through acknowledgement of areas of weaknesses as well as areas of excellence, willingness to seek help, focus on humanism and accountability to excellent care.[66–68] Institutions have a major role in establishing this culture to mitigate the effects of the hierarchical clinical environment, empower learners to take ownership of their professional growth, and enable collaborative bidirectional feedback. This empowerment can be driven by explicit expectations for collaborative calibration of performance against expected goals and clear messages that all professionals have strengths and areas for improvement. Focus on reflective practice, lifelong learning, and continuous improvement is essential for safe and high-quality patient care.

Relationships, not recipes, are more likely to promote feedback that has an impact on learner performance and ultimately patient care.[69] After all, why should feedback conversations be any different than skilled physician-patient communications, with a focus on rapport, learner self-reflection, and shared decision-making?

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