



The art of feedback: crafting mentorship in medicine

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Abstract: Mentorship and effective feedback are crucial parts of medicine that frequently get pushed aside for the more objective assessments in medical education. Effective mentorship can influence career choice, shape identity formation, and foster a sense of belonging for mentees in medicine. Conversely, unproductive mentorship and feedback founded on poor communication or lack of commitment can leave mentees disillusioned with academic medicine and can impair their confidence or motivation in their career path. Despite the influence that quality mentorship holds, several barriers to constructive feedback and effective mentorship exist. These barriers include the fast-paced nature of clinical settings as well as the brevity of mentor to mentee interactions that limit personalized and genuine advice that mentees receive. Additionally, many mentors in medicine fail to have a systematic method of providing feedback that would benefit the mentee. It is imperative for feedback and mentorship to be addressed now more than ever because of the high prevalence of physician burn-out and overwhelming stress levels in the medical field, especially after the coronavirus disease 2019 pandemic. Mentorship should be a personal, genuine, and longitudinal “coaching” that incorporates effective feedback following an Ask-Tell-Ask format where self-assessment is embedded into the process. The most important aspect of implementing these methods involves embracing these practices into the academic curriculum through workshops and simulated teaching sessions where mentors can learn and practice giving meaningful feedback. The intent of this manuscript is to review best practices in providing effective feedback.

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The role of feedback and mentorship in medicine

Mentorship in the context of medical education and clinical training has been emphasized for many years and has recently expanded to become an integral component of the field of academic medicine. The medical field necessitates roles that utilize mentorship and constructive feedback. Medical students, residents, fellows, and attendings learn procedure techniques, as well as clinical reasoning, by observing senior physicians and receiving direct feedback on their performance. Within medical education, feedback has been described as “specific information about the

comparison between a trainee’s observed performance and a standard, given with intent to improve the trainee’s performance (1)”. In essence, feedback is crafted from a comparison to a standard with the intention of modifying the learner’s thinking or behavior, ultimately improving their performance. Within academia, the primary focus of most student evaluations is condensed into scores, grades, and summative concepts that are produced at the end of one’s training. Therefore, the value of formative feedback in medical training gets brushed aside. Even if clinicians complete evaluations and formal feedback for

trainees at the end of their clinical rotations, the stressful environment and the graded nature of the evaluation are not optimal for constructive learning (2). Formative feedback involves active, timely, and specific teaching that is regularly communicated throughout one's training with the goal of motivating improvement in one's knowledge and performance.

Effective mentorship plays a critical role in medical education as it has been shown to influence career choice and direction, faculty retention, and identity formation for mentees (3). Due to the highly competitive nature of academic medicine, mentorship helps in providing personalized guidance for career planning, specialty decisions, and research and networking skillsets for mentees (4). Networking is a fundamental social environment in academic medicine, and mentorship can be one of the resources to help mentees initially navigate this network of opportunities (5). A qualitative study conducted in 2024 at the University of Toronto revealed that effective mentorship also influences faculty engagement and that prioritization and incentivization of mentorship fostered a productive medical community within faculty and trainees (6).

Feedback is a crucial element in medical learning due to the nuanced and intricate skill sets that each individual is responsible for performing within a medical team. Without constructive and detailed feedback, learners will lack the knowledge from their supervisors to improve or advance themselves, as they fail to identify their wrongs and reinforce their rights. This creates an unproductive and repetitive loop. In other words, without adequate feedback, "the uncertainty of a new clinical environment for a learner is intensified", and the student remains unconfident and misdirected (7). An ideal culture of mentorship and feedback fosters a bidirectional flow that benefits both the mentee and the mentor. For example, not only do mentors share their knowledge and techniques, but mentees, in turn, offer novel and innovative insights that enrich the mentor's experience (8). The weight and responsibility of maintaining a mentorship should be equally distributed between the mentee and the mentor. Similar to the roles that mentors have, mentees have the responsibility of asking mentors for advice as needed, being well-prepared and having an open attitude to feedback, and providing their own input on the feedback and advice that they receive (9). This reciprocal nature of mentorship is necessary for sustainable and long-term success in a mentor-mentee relationship.

Barriers to feedback

In a cross-sectional study involving medical residents conducted in 2024, 25.6% of medical residents reported that they received regular feedback on their clinical performance, and only 30% agreed that faculty had adequate time and personal knowledge about their mentees to provide appropriate and relatable feedback (10). Due to the fast-paced and busy nature of many clinical settings, physicians may fail to find protected time to build a genuine, personalized relationship with their mentee. This demonstrates a drawback in medical education, which fails to foster an environment that welcomes personalized mentorship and tailored feedback. The brevity of the interactions between mentees and their mentors can exacerbate this barrier by hindering the development of trust and guidance that is crucial in a constructive mentorship.

Another barrier in the pursuit of constructive feedback involves the lack of systemic or generalized approaches that physicians utilize to provide feedback. Considering the unique setting of performance evaluations in medicine, it is crucial to have a systematic approach in addressing the complex process of receiving, interpreting, and integrating feedback. The tools necessary for providing effective feedback are not ingrained within most medical school curriculums and thus could simply constitute a gap in the knowledge of clinicians (2). A parallel concept is the idea of self-assessments. Self-assessment is crucial in the clinical learning environment. A study conducted by Davis *et al.* used electronic databases to compare physicians' self-rated assessments with external observations and revealed that physicians have a limited ability to accurately self-assess (11). This study reports that the average physician is, in fact, overconfident in their own clinical skills. If physicians themselves do not have the skills to constructively evaluate themselves, how could we expect them to assess others? Thus, a key barrier to a productive teaching environment for physicians may stem from the underlying lack of evaluative skills necessary to identify shortcomings and effectively communicate areas of improvement.

The importance of a successful mentorship experience becomes evident when we consider the harmful effects of an unsuccessful one. Some mentor-mentee relationships can be founded on poor communication, lack of commitment,

or even conflicts of interest that result in ineffective mentoring. While these negative experiences can normally be overcome by finding another mentor whose goals and levels of commitment are better aligned, some long-lasting effects of a failed mentorship can remain. Mentees may be left disillusioned with academic medicine, causing a loss of trust in future mentorship experiences, or losing motivation or confidence in their career path (12). Therefore, another key barrier to effective mentorship and feedback includes the risk of instilling long-standing harmful effects on mentees and learners.

Feedback now: why it matters more than ever

Teaching and learning are critical parts of medical education. This leads us to the question: why are we revisiting the idea of effective feedback in clinical settings? A systematic review on medical student burnout prevalence rates was conducted in 2024, which revealed that the prevalence of burnout syndrome reached a peak of 88% in some countries; moreover, this highlights that unsustainable medical teaching is breaching the learning environment (13). The study further revealed that burnout is associated with negative life events, lack of support, and poor motivation. Having a strong relationship with a mentor who can provide relatable advice and guidance could thus fill in the gaps in support and motivation that learners are missing. In a systematic review of resident doctors and the prevalence of burnout, the overall burnout across all specialties was 82.1%, indicating the alarmingly high percentage of residents who face emotional exhaustion and reduced personal accomplishment (14).

During the coronavirus disease 2019 (COVID-19) pandemic, medical professionals were faced with increased workload, alongside having to adapt to the virtual format of their studies and courses. Although virtual lectures, workshops, and modules can prove to be efficient tools for learning, we have found that solely relying on online learning can stunt student performance clinically while dampening motivation for learning. A cross-sectional study conducted in 2023 revealed that blending both offline and online learning for students in medical education is the most effective teaching model, resulting in the highest pass rates and exam scores (15). A significant reason why an online-only teaching model can stunt student performance includes the lack of direct interaction with professors and prospective mentors, and the lack of personalized feedback that students can receive on their clinical reasoning and

problem solving. A meaningful relationship with a mentor who can not only give constructive feedback but also give advice and relate to the students' chosen career path can go a long way in preventing feelings of helplessness or burnout. The high prevalence of physician and medical student burnout, and its recent exacerbation, warrants a revisitation of the importance of feedback and mentorship for medical education.

Principles for effective mentorship

The idea of mentorship implicitly instills a hierarchy demonstrating a superior position over an inferior one, which can contradict the effective point of mentorship. Modern medical education should start shifting from a culture of evaluation to a culture of "coaching". Miller *et al.* suggest that coaching can cultivate trust and vulnerability within the teaching relationship, which can effectively foster learning conditions and allow students to incorporate personalized feedback from failures (16). Coaching should be a longitudinal relationship where the mentor and the mentee have shared goals. Without a longitudinal and personal relationship with their mentor, mentees are not able to receive tailored feedback and personalized attention for their performances. With longitudinal mentorship, the mentor understands the strengths and weaknesses that the mentee has and will then adapt their feedback in ways that will amplify the understanding of the learner. A national cross-sectional survey conducted within the field of general internal medicine found that an effective mentor not only teaches but also provides personal guidance and assists with socialization into a profession by spending the time to develop more meaningful relationships with the mentee (17). Such mentor-mentee relationships, which extend beyond strictly professional boundaries, foster enduring connections and can ensure long-term benefits to a mentee's future career development and professional identity formation.

The style and approach that the mentorship relationship holds can impact the learning that takes place. The style of feedback influences the student's attitude toward learning and reflection (18). We would like to propose the Ask-Tell-Ask feedback method, which blends constructive feedback with self-assessment. We first start by inviting the learner to reflect on their performance by asking questions like "How do you think that went?" or "What do you think you did/did not do well?" This initial "Ask" phase can encourage self-assessment and provide insight into the learner's perspective and understanding. The

next phase is “Tell”, where the mentor can share their own observations and thoughts on the performance of the learner. This includes highlighting what the learner did well while offering constructive feedback and opportunities for improvement. This step should be completed with specific examples and reiteration to ensure that the learner understands the feedback. The last phase is the second “Ask” phase, where the learner is asked how they would change their performance in the future or what their action plan is for improving their skills. This method of feedback encourages reflection while also providing a more dialogue-like style to the conversation, fostering self-motivation in the learner. Additionally, this method will equip the learner with the tools to adapt themselves in the future as they navigate future learning. Using this systematic approach to feedback can enhance learning outcomes and can cultivate a collaborative mentorship and reflective learning.

Teaching feedback: strategies for faculty development

Now that we have established the importance of effective mentorship and subsequent feedback, we must consider how we can spread this knowledge to faculty and clinical mentors. As aforementioned, a common barrier to effective feedback includes the lack of training in feedback delivery. We believe that academic medicine programs should involve workshop models and simulated teaching sessions where mentors themselves learn these skills and practice them to perfection so that they can adapt them to their mentees. A study conducted in 2020 implemented a training program for faculty and administrators in science fields where culturally-aware mentoring was taught (19). The results showed that these incorporated sessions allowed mentors and mentees to both feel confident in making culturally-informed suggestions and improve the quality of their interactions. In addition to these faculty development strategies, the Ophthalmology Foundation is an organization that solely focuses on education principles for faculty and commits to strengthening ophthalmic education within academic medicine. By directly providing mentorship for medical students and residents and elaborating on the importance of meaningful feedback, the Ophthalmology Foundation puts these techniques into action. For example, the Ophthalmology Foundation offers *Teaching Skills for Ophthalmic Educators Online Series*, which is a free course for any ophthalmologist who is interested in teaching ophthalmologists in training. This course includes

modules that inform about the principles of mentorship and learning.

Assessing feedback: final considerations

Extensive research has been conducted on how feedback is best assessed. Many studies discuss the importance of incorporating students’ thoughts on the quality of their feedback and the takeaways they have from their experience. A study conducted in South Korea conducted interviews with medical students on their satisfaction with their mentorship programs and its benefits to their learning and career to assess the effectiveness of faculty feedback and mentorship (20). On the other hand, the most objective way to evaluate the effectiveness of feedback would be to compare the performance of the learner before and after the feedback and assess the improvements to their performance. However, there are challenges in measuring the long-term impact of feedback on clinical competence as well as extensive variability across different settings, which can skew the evaluation of feedback. Since feedback is so content dependent, we believe that it is crucial to assess effective feedback by understanding to what extent the feedback aligned with the individual learner’s objectives and how it helped them with their learning.

In summary, effective feedback and meaningful mentorship are crucial in the learning environment of the medical field. However, various barriers to feedback exist, including the lack of systematic approaches in teaching feedback skills and the fast-paced nature of the field. With the increasing rates of medical resident burnout and evidence of ineffective learning and motivation for students, it is imperative that feedback skills are revisited in detail. Along with reassessing methods for effective feedback, teaching these methods and models, and expanding this knowledge to faculty and clinical mentors is necessary.

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