The Long and Winding Road

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A junior learner has just finished a day in the operating room with you. While they have been interactive and interested in learning during many of the components of their overall rotation, you have noticed that they have been consistently arriving late to departmental Grand Rounds and ambulatory clinic assignments, and they arrived late to assist in the operating room today. Please provide feedback on their performance.

The concept of feedback, in one form or another, has existed for centuries. Feedback is used in technological systems, where there are correcting actions between desired and actual performance. In nature, homeostasis in biological systems preserves thermal, chemical, and biological conditions through feedback. Economic trends are based on feedback through markets and the exchange of goods and services. In workplace settings, feedback provided by customer satisfaction surveys may be used in employee performance assessments. Literary and scientific reviews optimize the quality of the final publication.

Just call on me, and I'll send it along. There are many different definitions for feedback as it relates to medical education. One operational definition for feedback that has been proposed, following a comprehensive review of the literature, is "Specific information about the comparison between a trainee's observed performance and a standard, given with the intent to improve the trainee's performance."[1] This information may be acquired as assessment through such things as direct observation, individual and group evaluations, or multisource (a.k.a. 360-degree) feedback, from a variety of related health professionals, as well as patients and learner peers. Professional Mini-evaluation Exercises (P-MEX) and Mini-Clinical Evaluation Exercises (Mini-CEX) for use with feedback are being increasingly tailored to specific educational programs. Innovative applications, such as whiteboard animated educational videos and surgical boot camps, have the ability to provide additional assessment and feedback capacity.

We can work it out. Assessment of learners offers an opportunity to provide explicit feedback on their skills, to improve communication and encourage learning, and for curriculum enhancement. Feedback works best when it is administered on a regular basis, is specific, and is given in a timely manner. With assessment and feedback, learners develop independence with their learning and become better at monitoring the quality of their work, an important part of helping them become competent at complex tasks. However, the effects of feedback are multifaceted, and have been shown to depend on the specific quality of feedback that learners receive, the learners' goals and motives, and the learning context (and may also be influenced by the consequences of good or poor performance by the learner within that learning situation).[2] While medical educators frequently believe that they give feedback to learners, learners report that feedback is rare. One study showed that although 90% of attending surgeons reported giving feedback successfully, only 17% of their residents agreed with this assertion.[1] With the increasing expansion of distributed learning sites among medical schools in Canada, coordinated and consistent clinical experiences and performance feedback become critical.

Hey Jude, don't be afraid. While feedback is an important variable influencing learning, and can be motivational, it may also elicit strong emotional and defensive responses. We have all heard about the "feedback sandwich," where constructive information on performance deficiencies is bookended by positive comments. This type of feedback is designed to protect the learner's self-esteem and motivation; in fact, data suggest that such models for feedback diminish the likelihood that the learner will develop the reflective and self-evaluative skills required for ongoing clinical practice.[3]

Yesterday, all my troubles seemed so far away. With drawbacks in some styles of feedback, an emerging technique designed to identify discrepancies between goals

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and actual performance is the concept of "feedforward." While feedback may be described as a retrospective strategy (an assessment *of* learning), feedforward is a prospective one (an assessment *for* learning).[4] Feedforward seeks to create a reflective process, with students monitoring their learning process, overcoming perceived barriers to change, promoting self-directed and self-regulated learning, and serves to enhance future performance. Feedforward may overcome the limitations caused by emotional reactions to feedback, allowing learners to recognize the goal of the feedback and interpret and apply the suggestions in order to close the gap between the current level of performance and the expected learning objective.[5]

Here comes the sun. Medical education is evolving in leaps and bounds. Research in faculty development has shown that the quality of feedback by anaesthesiology faculty to a simulated resident trainee was improved in those faculty who underwent an educational intervention; they were better in maintaining a psychologically safe environment, in identifying and exploring performance gaps, and in directly discussing issues related to professionalism.[6] Mobile technology using a web-based clinical evaluation application has been shown to facilitate direct observation, assessment and feedback of student performance, with adequate interrater reliability and concurrent validity.[7] Objective Structured Assessment of Technical Skills (OSATS) and simulation sessions offer accessory feedback/feedforward modalities.

Let it be. We can't, and we haven't. Presentations at the 2013 Association of Academic Professionals in Obstetrics and Gynaecology of Canada (APOG) Annual Meeting highlighted the importance of appropriate goals and methods of formative assessment and feedback with introducing competency based medical education (CBME) in our residency programs. The specialty committees of the Royal College of Physicians and Surgeons of Canada (RCPSC) are, or will be, revising the Specialty Training Requirements and Objectives of Training documents to correspond with the national RCPSC Competence by Design project. The RCPSC is already developing an initiative for the implementation of CBME in residency training programs and specialty practice in Canada; CanMEDS 2015 is part of this Competence by Design project and will update the content of the Roles in the CanMEDS framework, and develop milestones to each Role that can be applied both in curriculum development and in learner assessment, with the goal to integrate these milestones across the continuum of a physician's career.[8]

It was 50 years ago this year when the Beatles received overwhelming positive audience feedback as they wowed their North American fans. We are now travelling down the long and winding road with the future of medical education, assessment, and feedback in Canada and around the world. Longitudinal clerkships proposed and implemented by Dalhousie and other universities reflect a cumulative and formative approach, using a variety of experiential and knowledge learning assessments, to the mastery of clinical skills throughout the undergraduate medical education program. National competency-based medical education is on our horizon. Changing provincial health care resources, reductions in operating room time and in the number of operative cases performed by learners, and restrictions in numbers of practising physicians and undergraduate and postgraduate training positions by provincial health departments challenge us to adapt with the times to maintain quality educational opportunities, in order to ensure ongoing excellence in the care of our patients.

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