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Using Small Case-Based Learning Groups as a Setting for Teaching Medical Students How to Provide and Receive Peer Feedback

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Abstract

As future physicians, nearly all medical students will be required to provide face-to-face feedback. Moreover, receiving high quality feedback from multiple perspectives is particularly valuable during the pre-clerkship training period. To address these needs, we developed a straightforward, easy to implement exercise that affords students the opportunity to practice giving and receiving feedback with peers. We describe how this exercise has been tailored to fit within the case-based learning small groups of our first-year curriculum and how to enhance the activity by weaving the basic principles of quality feedback into preparation sessions. This exercise has been valued greatly by students.

Keywords

Feedback; Case-based learning; Pre-clerkship; Peer feedback

Introduction

Providing and receiving feedback is an integral part of the life of a physician [1–3]. Feedback comes in many forms in the workplace; it may come formally through a structured supervisory relationship or informally through work relationships with peers and other

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healthcare professionals. In addition to *receiving* feedback, physicians routinely *provide* feedback to those with whom they collaborate in order to provide the best patient care [4].

Assessment is a well-established part of the medical school curriculum [5], but differs from the feedback process employed in the workplace of the practicing physician. Medical school curricula most commonly provide evaluations from authoritarian figures in a written format [6]. Students receive the majority of their assessments, including examination grades and performance reports on clinical activities, from faculty who are above them in the hierarchy [7]. Some curricula now include a small amount of feedback from peers, most commonly in a written format [8–10]. Usually, the data are provided anonymously, in a Likert scale format with a small amount of space for general written comments. It is often challenging for students to interpret these data due to lack of clarity in the statements shared and the inability for the student to ask the assessor for further explanation. This format typically is used to protect the identity of the assessor and to encourage full participation in the activity. Shue *et al.* reported that students generally were supportive of providing feedback to their peers if the assessments were anonymous [11]. This is also consistent with student feedback at our institution. Although the preference for anonymity is important to the person who is providing the peer feedback, it may not be the optimal format to help the student who is receiving the feedback to improve. Most significantly, anonymous written feedback does not reflect the format used in the professional setting, where face-to-face feedback is utilized routinely in both formal and informal environments [2].

To better prepare medical students for the next step in their career, they need to be carefully, concretely, and intentionally taught how to provide and receive useful peer feedback as well as how to receive it, as this is not an innate skill. Without the necessary training, medical students perceive the feedback received from their peers as less constructive, less accurate, and less meaningful when compared to the feedback received from their academic mentors [12]. We propose that students maintain these opinions primarily because most medical school curricula do not equip them with the skills that enable them to provide and receive useful feedback.

Just as medical students are taught clinical and procedural skills, they must be taught how to provide appropriate, specific, and easily interpreted feedback that promotes behavioral change or provides reassurance that a peer's performance is on track. Students rarely are placed in situations where they are asked to provide feedback to their peers in a professional setting beyond saying "Good job!". "Praise", such as this, has been shown to be ineffective at improving performance, and can be counter-productive [13]. Among other things, there is evidence that praise can establish a focus on reputation and acceptance, rather than one oriented to improved performance [13]. Given this, our goal is to help learners go beyond vague praise-like comments, and be able to practice giving and receiving feedback capable of informing and altering performance. Not surprisingly, a medical student who was part of a small group public feedback exercise remarked after the first experience: "I did not have a particularly enjoyable time and felt uncomfortable for part of it... I will be the first to admit that the way in which I gave my feedback, despite my best efforts to spare people's feelings, was not good" [14]. We believe that the skill of providing (and receiving) high-quality verbal feedback requires more than simply discussing correct techniques associated with effective

critiques. Feedback needs to be practiced regularly in order to achieve mastery [15]. Although the acquisition of the skill set associated with giving and receiving peer feedback represents a critical milestone in the development of a successful physician, it is not formally included in most undergraduate medical curricula [16].

Although many models have been proposed to teach learners how to provide and receive feedback, the best method for this process and the timing of when it takes place within the curriculum are debated [17]. However, there is a consensus that the environment in which the process is introduced and nurtured is an important key to its success [14].

Case-based learning sessions as a setting for teaching peer feedback

Pre-clerkship Case-Based Learning (CBL) sessions (or other similar small groups) offer an ideal environment for teaching medical students how to provide and receive quality feedback early in their training. The CBL groups at Vanderbilt University School of Medicine are organized to include a faculty facilitator and approximately eight students, and utilize an inquiry-based approach to dissect the biosciences that underlie a clinical case. Groups, which are formed every twelve weeks, are student-led and utilize a format similar to that of problem-based learning [18]. CBL sessions represent a collaborative and safe setting for learning and they more closely mirror interactions found in the clinical workplace as compared to those in the traditional lecture-based model [8].

Students in CBL groups are presented (in a step-by-step manner) with a structured patient case that includes a chief complaint, extensive history, physical examination, laboratory test results, evaluation, treatment plan, and outcomes similar to scenarios that physicians encounter in outpatient or inpatient settings. Students build a cohesive learning environment in this facilitated small group setting as they meet to work through the provided cases multiple times a week throughout a one-year pre-clerkship phase. Along their journey, students gain an intimate understanding of their peers' strengths as well as areas where improvement is needed. They also become invested in achieving group success and learn through their own experience that a well-functioning team accomplishes considerably more than an individual will on his/her own. Consequently, the CBL model provides a uniquely safe and supportive environment in which students can successfully provide and receive feedback in a manner that will help them to become better-prepared physicians.

The Feedback PLeaSe! method: Prepare, Listen and Summarize

The feedback method that we have developed can be divided into three phases: Preparation, Listening, and Summarizing (Table 1).

Prepare

Preparation includes both priming the CBL group for the effective feedback activities (Facilitator-guided preparation) and individual learner preparation for each iteration of feedback (Learner preparation).

Facilitator-guided preparation can begin within the first 1–2 weeks of the twelve-week CBL cycle. The goal of this first step is several-fold: to alert the learners to the forthcoming feedback exercises, to allow learners to express any concerns or questions, to educate learners about effective feedback, and to help learners prepare for their own work within the feedback process. As a starting point, the facilitator utilizes ~10–15 minutes of an early CBL session to introduce the concept of providing and receiving in-person peer feedback. To allay any possible anxieties related to the process [19], the facilitator shares the generally positive experience of previous learners. A very brief description of the process is then given. It is sufficient to explain that during an allotted time period of 10–15 minutes at the end of a CBL session, one person will receive feedback from each member of the group. The feedback will be narrowly focused on observable behaviors within the CBL paradigm, and it will be provided within a structured framework managed by the facilitator. It is clearly emphasized that providing and receiving verbal feedback are crucial skills for high functioning team environments. After the presentation, learners are invited to ask questions or share any concerns they may have. They also are encouraged to reach out to the facilitator privately regarding any trepidations prior to and throughout the longitudinal process. Clarity around the feedback process and proceeding with learner consent, helps to lessen apprehension to feedback and increase receptivity to the feedback provided [13]. Lastly, this introduction can be used to encourage learners to attend to areas of possible feedback for their peers as the group begins their work together.

The second activity within the facilitator-led preparation is providing simple training to learners regarding the nature of useful feedback. Typically, this can be carried out in a very abbreviated fashion through one or two short interactions with the CBL group at the end of case sessions. This education process can be broken down into two essential components of information: how to deliver effective feedback and how to receive feedback appropriately. Feedback has been described as a non-evaluative appraisal of performance [20]. This makes it distinct from summative assessments that require an additional judgment of the performance [3]. In the CBL setting, the goal is to accurately transmit information regarding the outward functioning of the learner receiving feedback for the purpose of informing his/her future performance. Many approaches and paradigms have been described to augment feedback effectiveness, however, Table 1 provides a simplified system that includes many of these best practices, yet is very simple. The cues provided in the acronym STAR, can be used to help learners understand some of the characteristics of effective feedback, namely 1) **S**pecific and observable; 2) **T**imely, 3) **A**ctionable, and 4) **R**eceived [21]. The focus on specific and observable behaviors is intended to allow feedback to be more objective and more effective [20]. It is valuable to encourage the learners to focus their feedback on issues impacting the group process (*e.g.*, “your questions often bring greater clarity and depth to our discussions...”), rather than issues more superficial or not easily actionable by the receiver of the feedback (*e.g.*, “you are really smart...”) [22]. This helps the feedback to be more easily understood and also more actionable. For example, comments regarding the overall intelligence of a person may not lead to a set of clear or tangible modifications in behavior. In contrast, comments on the preparedness of the individual for group sessions can be transparently tied to behavioral changes to improve performance. In general, the proposed framework provides for timeliness with respect to the

activity. However, this important aspect of effective feedback should be discussed for their future considerations. Lastly, to be truly impactful, feedback also must be effectively received [21]. In the context of the CBL curriculum, students are not only seeking mastery over the content, but they are also working to strengthen their role within the dynamic CBL team environment. Encouraging this goal-orientated attitude towards team improvement, and trying to minimize a merely performance-centric approach can cultivate a more receptive environment for feedback [23]. Additionally, it has been useful to appeal to learner curiosity with respect to receiving feedback. In general, regardless of the specific comments provided, the receiver is encouraged to stay engaged and curious about the nature and intent of the provided comments, while seeking to understand how these observations may help them achieve their goals of mastery. As the intent of the exercise is to provide reflective non-judgmental feedback, cultivating curiosity and goal-orientation helps push discussions toward greater clarity and away from defensive and/or conflictual interactions.

Learner preparation is aided by an established schedule for feedback interactions. A set rotation ensures all group members can be prepared to receive feedback or to provide feedback to a particular individual on a given date. Now the feedback process is ready to be implemented. To be received effectively, feedback must be physically heard. Thus, to minimize distractions and maximize preparedness, feedback should be wholly segregated into an encapsulated period at the beginning or end of a case session. Before the process begins, the facilitator makes a request for everyone to close or put away their computers, electronic devices, notebooks, etc. This is followed by a clear declaration that the group is about to enter into a period of feedback. Anecdotal evidence exists across our institution that effective feedback can often be undermined by the learner simply not being aware that feedback is being provided. One adjustment to avoid this is to proceed observations with a clear declaration that feedback is about to be provided to the learner. Another useful tool to aid the receiver's attentiveness to the verbal feedback is to free them from any need to document the feedback. The facilitator makes it clear that he/she will take notes on the nature of the feedback provided and send these to the receiver after the session has ended. This has been a surprisingly effective addition to the original implementation of this method. Learners receiving feedback have frequently expressed their appreciation for receiving this written reinforcement and reminder of the feedback from their peers. The intended recipient of the feedback is then asked if they are ready before proceeding. All of these actions help to maximize the focus of all learners on the feedback activity.

Listen

Now the group can proceed to providing feedback to the listening receiver. A volunteer initiates the process by providing feedback on a behaviorally anchored aspect of the receiver's performance that is positive in nature. For example, they might comment on some aspect of the recipient's performance that has been particularly helpful or useful to themselves or to the group. This person also comments on one specific aspect of the receiver's performance in which there is room for improvement. This is a modified version of the "sandwich technique" (a positive comment, followed by a suggested area of improvement, closing with another positive comment). However, to leave areas for others in the group to be able to participate, each member only offers a single appreciative/positive

comment followed by one suggested area for improvement. This allows for fuller participation by all group members. Because the interactions of the group generally are confined to the CBL environment, this limit provides openings for subsequent group members to offer feedback that has not been described already. It is important to stress to the learners that both the comments of appreciation and suggested improvement need to be phrased in actionable and non-judgmental terms. Noting problems in delivering effective feedback can provide conversation topics for future individual meetings between the faculty facilitator and learners. Feedback proceeds across the group members until they all have contributed.

Summarize

A key goal in the process is to ensure that the provided feedback was accurately understood. One way to help achieve this goal is to augment the effectiveness of receiving the feedback through incorporating active listening into the process [24]. Though definitions of active listening vary, most include showing attention through appropriate non-verbal cues (posture, facial expressions, eye contact, etc.), attentive silence, and summarizing the speaker's words and their purpose [25]. After all learners around the table have provided feedback to the receiving individual, the recipient provides a verbal synopsis of what was heard. It is often best to steer the receiver away from any rebuttal or response to the feedback. The priority here is to clearly establish that the feedback has been accurately received and understood. This summary by the receiver also affords an opportunity for those who provided the feedback to clarify or correct any misperceptions by the receiver. We, and others, have observed that clarity within the process and careful management by the facilitator, can minimize both excessive self-criticism, or defensiveness and resistance, that can otherwise be problematic in this population [26]. The summation process provides the group with an excellent opportunity to practice correcting any errors in perception. Because the goal of the exercise is to enhance the feedback skills of the learners, the role of the facilitator in direct feedback is kept limited. Typically, facilitators have several opportunities to provide written and verbal feedback to learners in other parts of the curriculum or at other times during the CBL process. Therefore, it is best to let all of the learners provide their feedback before any commentary by the facilitator is given. As the session closes, the facilitator should focus his/her comments on the feedback process rather than the receiving individual. For example, if a particularly useful or actionable conversation occurred during the process, this can be highlighted. Similarly, if there were comments that were judgmental or superficial in nature, the facilitator can use them as a learning opportunity, with the goal of helping students to become more skillful in providing valuable high quality verbal feedback. Finally, the facilitator should follow up with a written summary of the feedback session to the receiver.

Concluding Remarks

Even though this program was developed to assist students with the feedback process, it is notable that the learners also obtain rich data from their peers for improvement of their own performance. It has been relatively straightforward to incorporate this feedback process into our CBL format. Most importantly, it has been nearly universally appreciated by the participating learners. In order to gauge the utility of this process to learners, an electronic

survey (Table 2) was sent to students across the previous two years who had participated in a CBL group utilizing this feedback approach. Table 3 shows aggregated quantitative data from this learner survey. Firstly, the learners clearly understood the process. Secondly, learners overwhelmingly found the process to be a valuable addition to their CBL groups, and found that this exercise improved their skills at both giving and receiving feedback. The survey also offered, but did not require, participants the opportunity to provide comments on this feedback process. Table 4 shows a collection of representative comments. Though anecdotal, many are in line with previous observations in the literature, namely improving personal insight, the increased value of specific and actionable feedback, and the value of deliberate practice in improving feedback skills. Anonymous post-course reviews by learners did not have questions specifically addressing the feedback process. However, consistent with the survey comments learners frequently mentioned the process in their open comment section citing it having had an impact on their feedback skills and overall comfort with feedback (data not shown). Our current goal is to carry out a more formal assessment of the impact of this feedback program on learners and to establish a system for continuous improvement of the paradigm.

There are many lessons that have been learned through experiences with the Feedback PLeaSe model as outlined. It is most successful when the facilitator has bought into the approach, sees the importance of this activity, and encourages students to provide high-quality feedback. We have found that being exceptionally clear about the structured approach greatly alleviates student concerns, and promotes a cooperative environment. The facilitator also needs to monitor the timing of when it is started each session so that the students do not feel rushed in giving or summarizing the feedback.

Overall, this model has been successful based on the survey data collected, but there are still limitations. If students do not provide quality feedback and the facilitator does not intervene well, group dynamics can suffer greatly. Some students may not see the benefit of practicing giving and receiving feedback, and can feel that time spent on content material is then sacrificed. Within our CBL-model, the majority of groups have a consistent facilitator for the multi-month unit. However, this method can be challenging if there is a substitute facilitator(s) guiding the group through the process. Knowledge of the particular dynamics of the group is useful in guiding a smooth and useful process.

In summary, we have developed and implemented a structured framework for assisting medical students improve the quality of the verbal feedback that they provide and to enhance the ability of these individuals to receive and act upon that feedback. Although we have found that CBL sessions provide an ideal setting for this feedback program, it can easily be adapted to a variety of other facilitated small group sessions.

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Table 1**Feedback PLeaSe! A feedback method for small groups**

Prepare	
1	<p>Facilitator-led Preparation</p> <ol style="list-style-type: none"> 1. Announce the intention to conduct face-to-face peer feedback. A major goal is to lower anxiety and increase receptivity. 2. Effective feedback training. One possible model to use is STAR. <ul style="list-style-type: none"> <u>S</u>pecific – Feedback should relate to discreet and observable behaviors that are relevant to the mission of the group (here Case-Based Learning). <u>T</u>imely – Feedback is often best understood within or closely timed to the environment in which the focal point of the feedback occurred. <u>A</u>ctionable – Neutral, goal-oriented observations regarding behaviors that can be modified provide the receiver of the feedback with useful comments upon which they can act. <u>R</u>eceived – In order to be effective, feedback must be accurately received. Cultivating a goal-oriented environment can minimize performance- centric behavior and increase receptivity to feedback. Secondly, clarity that feedback is about to be provided can help maximize attention to and comprehension of the feedback provided.
2	<p>Learner Preparation</p> <ol style="list-style-type: none"> 1. An early discussion of feedback is meant to augment learner attention to peer behaviors that may be the subjects of their future feedback to peers. 2. Just prior to group members delivering feedback, the facilitator announces that feedback will be provided to the selected group member. Once ready the receiver of feedback is ready, the group can proceed to providing feedback.
Listen	
<ul style="list-style-type: none"> • In turn, each member of the group individually provides feedback consistent using the <i>STAR</i> guidelines above. Each member is asked to offer one positive or appreciative observation and one comment regarding an area for growth or improvement. • The facilitator takes notes of the feedback provided to send in written form to the receiver at a later date. • The receiver of the feedback is encouraged to listen and attempt to integrate the feedback provided. 	
Summarize	
<ul style="list-style-type: none"> • After all group members have offered their observations, the receiver will give a short verbal synthesis of the key points of what they understood from the observations provided. Incorporation of this active listening concept is to ensure feedback was received and to maximize the accuracy of feedback interpretation. • This is also a time when the receiver can engage the group in questions to increase clarity and/or discuss strategies for improvement. 	

Table 2

Learner Survey.

The purpose of this survey is to evaluate the impact of the face-to-face peer feedback process implemented within your previous Case-based learning group. Your responses will be made anonymous and all responses will be kept confidential. 0 = Strongly Disagree (SD) 1 = Disagree (D) 2 = Slightly Disagree (SID) 3 = Slightly Agree (SIA) 4 = Agree (A) 5 = Strongly Agree (SA) 6 = Not Applicable (NA)

- 1 The feedback process was clear.
- 2 The overall feedback process improved my skills at providing feedback effectively.
- 3 The overall feedback process improved my skills at receiving feedback effectively.
- 4 Face-to-face feedback in my CBL group, was a valuable addition to the anonymous peer feedback process.

Please provide any comments you may have on the strengths and/or weaknesses of the face-to-face feedback process implemented in your CBL group

Table 3

Results from Learner Survey.

Question	Learner Responses (mean +/- SD ^a)
The feedback process was clear	4.74 +/- 0.45
The overall feedback process improved my skills at providing feedback effectively	4.57 +/- 0.66
The overall feedback process improved my skills at receiving feedback effectively.	4.74 +/- 0.54
Face-to-face feedback in my CBL group, was a valuable addition to the anonymous peer feedback process.	4.70 +/- 0.63

^aSD standard deviation

n=23

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Table 4

Representative student survey comments

Please provide any comments you may have on the strengths and/or weaknesses of the face-to-face feedback process implemented in your CBL group.
This feedback process was a highlight of the CBL process for me. The CBL learning modality emphasizes teamwork skills, and the inclusion of both giving and receiving in-person feedback was a valuable addition to the teamwork atmosphere, and to our education. Not to mention that it helped me better understand my strengths and weaknesses in such a setting.
In my experience, anonymous peer feedback tends to be ironically more superficial, as many people don't put as much thought into what they say. I felt that, in face-to-face feedback, people were willing to think more about their feedback and increase the level of variety.
In order for this process to be successful the facilitator must play a role in effectively describing what specific feedback entails and probing when nonspecific or generic feedback is offered by a student. If this is not done, the feedback quickly becomes generic and useless. However, when it is performed correctly, I feel that this system is as effective or more than anonymous online feedback. It also helps with the overall group cohesiveness and relationships.
It provided an opportunity to practice receiving face to face feedback much as we would during clinical year. It also gave me a chance to practice giving feedback to someone's face which is a different challenge than filling out an anonymous survey.
Face-to-face feedback was an excellent way of gaining experience and confidence in giving productive in a professional environment, which many of us may not have had before. I would say the only drawback is that I think sometimes people might hold back on concerns or complaints they have about someone when feedback is done so publicly.
I truly believe doing this exercise has made me better and more comfortable at giving feedback face to face. There is a real art in being able to give constructive feedback to a team member. Being able to motivate and provide specifics while refraining from coming across as paternalistic or self-righteous is hard but attainable through practice.
Face-to-face feedback helped me learn to articulate my feedback in a helpful and friendly way. It also improved my ability to receive and interpret feedback effectively by restating my peers' comments and asking follow-up questions when needed. The quality of the feedback that we all gave improved tremendously throughout the block and improved the cohesion and effectiveness of the group as a whole. I especially appreciated the CBL facilitators who would push each of us to give specific and concrete feedback, rather than generalizations--the process had more of an impact when he or she insisted upon this.
I think that the face-to-face feedback process prepares us much more for how feedback works in real life when we are working in the hospital because that is how most feedback is given. It teaches us how to not only learn how to receive feedback but also how to give constructive feedback in a way that is useful for the person but not offensive / harmful.
Receiving and giving face-to-face feedback is a good life skill; I felt really comfortable with my classmates by that point in the year and wasn't embarrassed to say what I felt, but I liked being able to practice in that safe environment for future situations.