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Vicki Hayes
Maine Medical Center

Et al.

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A Four-Year Longitudinal Curriculum to Improve Feedback-Seeking Behaviors for Medical Students

Authors

Vicki Hayes, Robert Bing-You, Tamara Palka, Marybeth D. Ford, and Robert Trowbridge Jr

INNOVATION HIGHLIGHT

A Four-Year Longitudinal Curriculum to Improve Feedback-Seeking Behaviors for Medical Students

Victoria Hayes, MD,¹ Robert Bing-You, MD, MEd, MBA,² Tamara Palka, MD,³ Marybeth Ford, MD,⁴ Robert L. Trowbridge, MD⁵

¹Maine Medical Center, Department of Family Medicine, Portland, ME, ²Maine Medical Center, Department of Medical Education, Portland, ME, ³Maine Medical Center, Department of Psychiatry, Portland, ME, ⁴MidCoast Hospital, Department of Surgery, Brunswick, ME, ⁵Maine Medical Center, Department of Medicine, Portland, ME

Introduction:	Feedback is essential for performance improvement and plays a pivotal role in competency-based medical education. Medical learners need training to acquire skills to effectively seek feedback for their unique situations.
Methods:	We developed a 4-year longitudinal curriculum designed to encourage feedback-seeking by medical students. The 4.5-hour curriculum consisted of interactive lectures, feedback-seeking surveys, trigger videotapes, and peer-group discussions in small- and large-group formats. A volunteer study cohort (n = 14/37, 38%) was interviewed in 4 separate waves in individual and focus-group formats to explore perceptions about feedback-seeking and effectiveness of the curriculum.
Results:	Themes and student quotes related to the learning objectives were summarized. The students expressed appreciation for the value of seeking feedback. They appreciated the techniques they learned and the frequent reminders. They particularly appreciated the opportunities to share successes and failures related to feedback-seeking with their peers.
Discussion:	Our novel feedback-seeking curriculum supported students' understanding of the importance of feedback and their effective use of multiple feedback-seeking techniques. The longitudinal component supports greater opportunity for building space in the curriculum, incorporating reflection and reinforcement, and creating capacity for student application and technique refinement.
Conclusions:	Teaching students feedback-seeking through various techniques tailored for their unique situations, rather than waiting to potentially receive feedback, is important for their professional development and overall medical education.
Key words:	feedback, curriculum, longitudinal study, medical students

Feedback is essential for performance improvement and plays a pivotal role in competency-based medical education.¹ Some medical programs have added feedback education to their curriculum²; however, the overall effectiveness and structure of these programs is not known.³

A scoping review of the literature on feedback in medical education identified “methods to help students ask for and receive feedback” as a gap

that warranted future scholarly effort.⁴ Several studies describe approaches involving single feedback interventions.⁴⁻⁸ We designed a 4-year longitudinal curriculum in feedback-seeking that incorporates (1) feedback education, (2) skills application, (3) reinforcement, and (4) evaluation. Our curriculum uniquely merges basic feedback education with a feedback-seeking focus and an extensive longitudinal component. By utilizing effective feedback-seeking methods, students can elicit feedback that is specific to their needs, even from people who may not have high-quality skills or training in delivering feedback.

Correspondence: Victoria Hayes MD
Department of Family Medicine, Maine Medical Center
Portland, ME
hayesv@mmc.org

METHODS

Setting and participants

Our 4-year longitudinal curriculum was delivered to 1 class of the Tufts University School of Medicine Maine Track class beginning in fall of 2018 (n = 37). The study group included a volunteer cohort within the class (n = 14/37, 38%) who participated throughout all 4 years. Students received no additional formal curriculum related explicitly to feedback. Sessions were conducted independent of other co-occurring curricular content.

Evaluation

Survey results for 3 instruments related to goal setting and growth mindset were obtained.⁹⁻¹¹

Effectiveness of this curriculum was assessed through a series of 3 waves of semi-structured one-on-one interviews and fourth-year focus groups. All first year Maine Track students were invited by email to participate before delivering the curriculum. No incentives were offered. Signed consent forms were obtained. Fourteen students (n = 37, 38%) participated in the series of individual interviews. Thirteen members of the study group (n = 14, 93%) participated in focus groups toward the end of their fourth year via Zoom (Version 5.5.5). Verbatim transcripts of the interviews were independently reviewed and analyzed by 2 authors (R.B., V.H.), and agreement on themes related to course objectives and supportive quotes determined. Students were assigned alphanumeric codes based on interview order for each specific wave or “FG” and number for the focus group. The MaineHealth Institutional Review Board deemed the study exempt on March 5, 2018 [1185650-1].

A description of a phenomenographic focus of this study is in a companion article in this journal issue (“Desperately Seeking Feedback: A Phenomenographic Study of Medical Students’ Experiences During a 4-Year Longitudinal Feedback Curriculum” (Bing-You, et al).

Curriculum design

The curriculum was developed by faculty with specific experience in feedback teaching and research. The curriculum consisted of a series of 6 components delivered longitudinally over a total of 4.5 hours during the 4 years of medical school (Table 1).

Component 1. The first session was delivered in the spring of 2018 at the end of year 1 by 2 of the authors (R.T., M.F.). This “Feedback 101” session consisted of a 1-hour interactive presentation covering basic elements of effective feedback in a large-group format.

Component 2. The second session, “Understanding Where I Am Coming From,” was designed to raise students’ awareness about their preferences related to feedback-seeking. During this 1-hour, large-group workshop conducted by 2 authors (M.F., V.H.), students completed 3 instruments related to goal setting and growth mindset: goal orientation,⁹ regulatory focus,¹⁰ and inquiry/monitoring.¹¹ After scoring and reviewing results, students were divided randomly into small groups of 4 to 5 students for 10 to 15 minutes to discuss reactions and reflect on possible applications. Students shared key points in a large-group discussion facilitated by faculty.

Component 3. The third 1-hour, large-group workshop, “Right Time, Right Place, Right Person, Right Technique,” was conducted in the fall of year 2 by 4 authors (V.H., R.B., T.P., M.F.). The session was designed to help students select the most effective conditions in which to seek feedback. It consisted of an interactive didactic presentation involving trigger videotapes that illustrated elements of effective and ineffective feedback-seeking. Students shared suggestions from their own experiences in seeking feedback in a small-group format, and they were provided with case scenarios for a brief role-playing session.

Component 4. The fourth session, “The Art (and Finesse) of Seeking Feedback,” occurred in the spring of year 2 and reinforced principles of effectively soliciting feedback. Factors related to goal orientation and growth mindset were presented. The principles of “Right Time, Right Place, Right Person, Right Technique” were reviewed. This 1-hour, large-group workshop included a panel discussion with fourth-year medical students that centered on experiences with effective feedback-seeking. This session was conducted by 4 authors (R.B., R.T., M.F., V.H.).

Component 5. The fifth session, entitled “The Art (and Artifice) of Seeking Feedback,” was delivered during the core clerkship year by 3 authors (R.B., R.T., M.F.). Students were randomly-assigned to small-group discussions of 4 to 5 students. In

Table 1. Educational Program for Medical Students to Enhance Their Feedback-Seeking Approaches

Goal: To improve medical students' feedback-seeking capabilities.

Learner objectives: at the completion of the program, students should be able to describe the importance of feedback and the elements of effective feedback

1. Describe one's preferences and tendencies as they relate to how feedback is sought
2. Select the appropriate environment to seek feedback
3. Effectively utilize multiple techniques in acquiring feedback

Component	Learner goals	Description of activity	Timing
Feedback 101	Describe the importance of feedback and the elements of effective feedback	1-hour large group workshop Interactive presentation with discussion	April 2018, first year
Understanding Where I Am Coming From	Describe one's preferences and tendencies as they relate to how feedback is sought	1-hour large group workshop Complete the following instruments: goal orientation*, regulatory focus†, inquiry/monitoring‡ Review and reflection of instrument results in small groups	May 2018, first year
Right Time, Right Place, Right Person, Right Technique	Select the appropriate environment to seek feedback	1-hour large-group workshop Trigger videotapes Based on "Right time, right place, right person, right technique" construct: -picking the right feedback provider -picking the best time to seek feedback -picking a good place to seek feedback -picking the right technique -modalities for receiving feedback (ie, verbal, written) Role-playing	October 2018, second year
The Art (And Finesse) of Seeking Feedback	Effectively utilize multiple techniques in acquiring feedback	1-hour large-group workshop Review "Right time, right place, right person, right technique" construct Interactive session with fourth-year student panel centered on effective feedback	April 2019, orientation week for core clerkship year

Table 1. (continued) Educational Program for Medical Students to Enhance Their Feedback-Seeking Approaches

Component	Learner goals	Description of activity	Timing
The Art (And Artifice) of Seeking Feedback	Effectively utilize multiple techniques in acquiring feedback	30-minute small-group sessions during Internal Medicine clerkship for block students	July 2019 through January 2020, core clerkship year
		30-minute large-group session for longitudinal integrated clerkship students	
		Review “Right time, right place, right person, right technique” construct, and debriefing of feedback experiences to date	
Maximizing What Feedback You Get Out of the Fourth Year	Refine feedback-seeking behaviors	Email to fourth-year class [§]	July 2020, advanced clinical rotation year
		Reminder to try feedback techniques, 2 handouts	

* Goal orientation⁹

† Regulatory focus¹⁰

‡ Inquiry/monitoring behavior¹¹

[§]The original component of the program was planned to be in-person. Due to the COVID-19 pandemic, the authors virtually reinforced feedback approaches.

these discussions, the students spent 30 minutes reviewing and reinforcing the feedback-seeking techniques they learned and discussing their feedback experiences to date.

Component 6. The sixth component, “Maximizing What Feedback You Get Out of the Fourth Year,” was slated for early in the advanced clinical rotation year. Originally planned as an in-person session, it was altered to an electronic format due to the COVID-19 pandemic. All fourth-year students received an email from R.B. with the handouts introduced at prior sessions and a reminder to continue to utilize effective feedback-seeking techniques. Students were encouraged to try new feedback-seeking methods and to translate their knowledge into feedback delivery and education.

RESULTS

Survey results

Goal orientation: Student response (n = 37) to the questionnaire generated 3 scores based on the 6-point scale: learning goal (group mean = 5.2, range 4.2 - 6.0), performance-prove (group mean = 4.0, range 2.3 - 6.0), and performance-avoid (group mean = 3.1, range 1.8 - 4.0). The highest of the individual's 3 average scores suggests their goal-orientation tendency.⁹

Regulatory focus/Event reaction: Student responses (n = 37) to the survey generated 2 scores based on the 5-point scale: promotion focus score (group mean = 4.1, range 2.2 - 5.0) and prevention focus score (group mean = 3.8, range 1.6 - 5.0). Kluger proposed that encouraging a learner to reflect on their promotion focus may help nurture receptivity to feedback.^{10,12}

Inquiry/Monitoring: A monitoring score (n = 37; group mean = 3.6, range 2.5 - 4.8) and an inquiry score (group mean = 3.2, range 1.6 - 5.0) based on a 5-point scale were determined. Per Ashford,¹¹ higher scores suggest an individual's preferred tendency in seeking feedback.

Interviews

A summary of the themes and student quotes related to the learning objectives included:

Describe the importance of feedback and elements of effective feedback. The students expressed appreciation of the need for feedback

and the value of the skills they acquired in the workshops.

The workshop...was the first time where the idea of feedback was presented in a way that I could grasp it and feel as if walking out that it was a skill I could actually use. (MW1)

Broadly, it's just helpful having a program that helps us understand that feedback is something we should be doing and why it's beneficial. (GW3)

Describe one's preferences and tendencies related to how feedback is sought. Students appreciated the opportunity to acquire more self-awareness about their feedback-seeking skills through the sessions and which techniques worked for them.

As one of the questionnaires taught me, one of my big motivations is I like to learn new things. And to me, that insight and self-reflection is pretty powerful. (KW1)

The list of different things you could say or strategies you could use to seek out feedback—that's helpful for people to see there's no one way. And it fits people's personalities differently. (GW3)

Select the appropriate environment to seek feedback. Students valued the skills and encouragement to seek feedback from the right person in the proper place and time. Students also expressed that, as they became more knowledgeable, they felt more frustrated by poor feedback and the lack of adequate preceptor training.

Because the workshop was top of my mind, I felt primed and able, I felt like I had the words to use. It was a lot easier and came more naturally. (MW1)

It sets the expectation that we should be getting feedback from our preceptor, so when that feedback isn't as useful or beneficial, then it can be kind of frustrating. (FGB)

Effectively utilize multiple techniques in acquiring feedback. The students indicated that the curriculum helped them feel more confident and have more courage in trying different techniques to seek feedback.

The workshops have been really helpful. Overall, it just gave me more confidence in using techniques to ask for that feedback and kind of taking charge of my education. (LW2)

Just having that handout [of feedback-seeking techniques]—I put it in my kitchen. I think for me just having the language is the most helpful. (JW3)

DISCUSSION

Unique aspects of this curriculum are its focus on feedback-seeking and that the material was delivered over an extended period of time. The longitudinal design incorporates Kolb's experiential learning cycle¹³ and is based on students having an authentic experience in their clinical settings. This protracted component affords greater opportunity for building needed space in the curriculum, incorporating reflection and reinforcement, and creating capacity for student application and refinement. One of the most effective reported components of the curriculum was the opportunity to discuss personal experiences with peers.

Our results are limited by the curriculum being delivered at only one institution and with only one cohort of students. Focus groups and individual interviews were conducted with a self-selected subpopulation of the entire class. It is possible that students who volunteered to participate were influenced by factors that differed from those who did not choose to participate. In addition, our findings are based on student self-reports rather than objective data.

CONCLUSIONS

We hope the curriculum presented here will encourage others to incorporate elements of feedback-seeking training into their medical school curriculum. We believe that seeking feedback through a variety of techniques tailored to students' unique situations is important for their professional development and overall medical education.

Conflicts of interest: None

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