Moderator: Paul A. Hemmer, MD, MPH

From Cheerleader to Coach: The Developmental Progression of Bedside Teachers in Giving Feedback to Early Learners

Marjorie D. Wenrich, MPH, Molly Blackley Jackson, MD, Ramoncita R. Maestas, MD, Ineke H.A.P. Wolfhagen, PhD, and Albert J.J. Scherpbier, MD, PhD

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Abstract

Background

Medical students learn clinical skills at the bedside from teaching clinicians, who often learn to teach by teaching. Little is known about the process of becoming an effective clinical teacher. Understanding how teaching skills and approaches change with experience may help tailor faculty development for new teachers. Focusing on giving feedback to early learners, the authors asked: What is the developmental progression of clinician–teachers as they learn to give clinical skills feedback to medical students?

Method

This qualitative study included longitudinal interviews with clinician–teachers over five years in a new clinical skills teaching program for preclinical medical students. Techniques derived from grounded theory were used for initial analyses. The current study focused on one theme identified in initial analyses: giving feedback to students. Transcript passages were organized by interview year, coded, and discussed in year clusters; thematic codes were compared and emergent codes developed.

Results

Themes related to giving feedback demonstrated a dyadic structure: characteristic of less experienced teachers versus characteristic of experienced teachers. Seven dominant dyadic themes emerged, including teacher as cheerleader versus coach, concern about student fragility versus understanding resilience, and focus on creating a safe environment versus challenging students within a safe environment.

Conclusions

With consistent teaching, clinical teachers demonstrated progress in giving feedback to students in multiple areas, including understanding students' developmental trajectory and needs, developing tools and strategies, and adopting a dynamic, challenging, inclusive team approach. Ongoing teaching opportunities with targeted faculty development may help improve clinician–teachers' feedback skills and approaches.

An often-used aphorism about clinical teaching in medical education is "See one, do one, teach one." This phrase, most commonly about learning medical procedures but relevant to all clinical training, has implications for teachers and learners alike. Most clinical teachers learn to teach "on the job"; many begin during residency, with little training or oversight.[1–4] Some learn or augment their skills through faculty development programs.[5,6]

A number of studies have advanced our understanding of clinical teaching; attributes of the excellent teacher have been identified and discussed.[7–13] In a systematic review of characteristics of good clinical teachers, two-thirds were noncognitive, such as positive relationships with students and supportive learning environment, communication skills, and enthusiasm.[7] Little is known about areas in which clinician–teachers develop teaching skills and approaches as they progress toward becoming effective clinical teachers. Elucidating what clinical teachers initially find challenging and where and how they change with experience may help tailor faculty development and identify new teaching models.

Through a longitudinal qualitative study, we examined on-the-job development of teachers as they began a new bedside clinical skills teaching program for preclinical students. Interviews were conducted with clinical teachers during the first five years of the Colleges program at the University of Washington School of Medicine to assess how they develop, change, and mature over time.

For the current study, we examined one teaching area that emerged as a dominant theme: giving feedback to students. Central to clinical teaching, feedback is necessary to optimal student skill development and refinement[14–17] but is frequently avoided, underused, and imparted poorly.[16,18,19] Most clinical teachers receive little or no instruction in giving feedback,[16] though studies suggest that faculty development can positively advance feedback skills.[20–22] Examination of how teachers develop expertise in giving feedback may provide insight regarding the trajectory for acquisition of this and other teaching skills. In this study of clinician–teachers working with medical students during their first intensive bedside clinical skills training, we asked the research question, How do clinician–teachers change in their teaching as they gain experience in giving clinical skills feedback to early learners at the bedside?

The conceptual framework through which we approached this work was pedagogical content knowledge[23,24]

Correspondence: Marjorie D. Wenrich, MPH, Office of the Executive Vice President for Medical Affairs, UW Medicine, Box 356350, University of Washington, Seattle, WA 98195-6350; e-mail: maxter@uw.edu.

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which describes multiple forms of knowledge that contribute to excellent clinical teaching: knowledge of medicine, patients, and context as well as educational knowledge of pedagogy and learners, and case-based teaching scripts. This model recognizes and builds on the breadth and depth involved in mastery rather than considering either content or pedagogy alone as the core of teaching excellence.[12]

Method

Description of teaching program

The Colleges program, which began in 2003, provides clinical skills training to medical students throughout second year, along with mentoring throughout students' education. The program has been described.[25–28] College faculty were clinician–teachers selected in a competitive process and represented many clinical specialties. All had experience teaching medical students and/or residents; however, prior to the Colleges program, preclerkship clinical skills teaching was provided in nonacademic, community preceptorships. Therefore, most participants in this study were new to teaching clinical skills to this student level, and none had done so on a long-term basis.

College faculty teach consistent groups of six students one morning a week throughout students' second year. Students perform complete history and physical examinations on inpatients, give oral case presentations to the mentor and peers, and complete write-ups. These sessions are supervised by the mentor and are followed by feedback for the student and teaching on the clinical case.

College faculty met monthly and frequently received faculty development in two-hour sessions on a variety of topics during those meetings. In the course of this study (2003–2007), two separate two-hour faculty development sessions focused on giving feedback to students. These consisted of guided group and small-group discussions about how to give feedback.

Study design

At the start of the Colleges program, investigators initiated a longitudinal qualitative study to assess how clinician–teachers approach teaching preclinical medical students. The study was conducted over five years (2003–2007), with three sets of one-on-one interviews. All 31 clinician–teachers agreed to participate; not all were available for all three interviews because of schedule conflicts.

Clinician–teachers were asked about teaching experiences, how their teaching changed over time, challenges and satisfaction, mentoring, and other areas. At the completion of interviews, three investigators undertook yearlong qualitative data analyses to identify key thematic codes for closer examination in subsequent analyses. The study described in this paper analyzes a key theme identified: giving feedback to students.

This research was granted exempt status in accordance with federal regulations under Category 2 by the University of Washington Human Subjects Division.

Instruments and data collection

Four investigators designed semistructured questions that were modified slightly each year to address emerging themes. During second interviews, many questions focused on mentoring roles. During the first and final interviews, more questions focused on clinical teaching. Examples include the following: How do you set priorities for a teaching session? How would you describe your approach to teaching students and what you feel they need to know? Has the way you give feedback changed or the amount of feedback that you give changed over time?

Five interviewers conducted interviews, which were audiotaped and transcribed without identifiers. Interviews averaged 30 minutes. Basic demographic data were collected, but because of the qualitative approach and limited participants, no efforts were made to correlate demographic data with individual transcript passages.

Data analysis

For the initial study, three investigators (including M.D.W. and M.B.J.) reviewed all transcripts from all years and developed codes using constant comparison and coding techniques derived from grounded theory.[28] The investigators first independently developed initial coding structures based on five transcripts and then met to discuss and agree on a common coding approach and initial code definitions. Over the subsequent year, investigators coded all transcripts, meeting in pairs to compare and resolve discrepancies and agree on new codes. Codes were then organized into larger, related clusters. Data organization was performed using Atlas Ti software. Giving feedback to students was one of the emergent key codes.

For the current study, three investigators (M.D.W., M.B.J., R.R.M.) reviewed all passages for the code "giving feedback to students" and independently developed thematic codes. Passages were organized by interview year and reviewed in order, from earliest to latest (i.e., Year 1 first, then Year 3, and then Year 5), with themes subsequently identified and clustered by year. All passages were discussed in year clusters, and thematic codes were compared among three investigators. This permitted assessment of the study participants' "maturation" over the five years in their perspectives.

Rather than restricting codes to limited words or phrases, investigators allowed significant flexibility in using longer descriptive phrases, incorporating all relevant descriptors, and did not limit the number of codes. This provided a phenomenological approach in which investigators responded to the experience in the words rather than strict isolation of codes as symbolic placeholders. Examples of thematic codes are "encouragement/supportive," "tailors feedback to student preference," "a lot of praise, a little criticism," "gives specific feedback," and "able to give repetitive critical feedback." Discrepancies were discussed and resolved.

After initial coding, investigators independently reviewed thematic codes by year with associated passages and developed emergent themes for each year. The investigators compared themes and determined the most relevant and salient. For each emergent theme, investigators re-reviewed transcripts to ensure theme veracity to the data. The investigators then examined themes for longitudinal trends.

Validation of themes

To ascertain theme validity, two focus groups were held in 2014. The first was held with five participants in the original interviews. The second was with five clinician–teachers who had taught in the Colleges for less than two years. All respondents agreed to participate.

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Participants were asked to review the themes and discussed which were meaningful to them and which were not, and to identify whether the data resonated overall. One investigator (M.B.J.) led the focus groups, and two investigators (M.D.W., R.R.M.) took detailed notes.

In general, the themes resonated with both more and less experienced teachers. Several in both focus groups suggested slight wording changes. Some specific comments from focus group participants are included in Results.

Results

Of 31 participants, 29 were interviewed two or three times, and 2 were interviewed once, for a total of 82 interviews. Fourteen participants were men and 17 were women. Twenty practiced primary care, and 11 practiced other specialties (e.g., pediatric subspecialty, psychiatry, obstetrics–gynecology).[28] Thirteen had taught 10 or fewer years, and 18 had taught more than 10 years.

Themes were organized dyadically into "More Characteristic of Less Experienced Teachers" and "More Characteristic of Experienced Teachers." Seven dyadic themes were identified with contrasting descriptors (Table 1). (The number and year after each quote below represent the physician identification and the interview year among the three progressive interviews performed in 2003, 2004, and 2007 with the same group of teachers.)

Theme 1: Teacher as cheerleader/teacher as coach

Less experienced teachers described focusing on positive feedback and minimizing negative feedback:

> I tend to be a bit of a cheerleader. Try and emphasize what they're doing well.… "All this will come with time. Have faith, you're doing fine." (MD 27, Year 1)

More experienced teachers described providing honest, transparent feedback:

> [Last year] I felt I had to be everybody's friend and be positive and a cheerleader. This time, I lost that feeling. I thought to myself, I don't care if they consider me a friend. I think they'll grow and they'll respect me regardless if I get them to a better place. (MD 45, Year 2)

Less experienced teachers provided feedback in very general terms:

> I like to give people pats on the back and say, "Oh, you're doing a great job." (MD 45, Year 1)

Those with more experience described being more specific, directive, and targeted:

> You're off track here. You need to try something else. Maybe you should try this. (MD 66, Year 3)

Theme 2: Passive teacher role/ calibrated teacher role

Less experienced teachers described a relatively passive role at the bedside compared with the more active, dynamic involvement of experienced teachers. Less experienced teachers tended to follow students' lead. In bedside sessions, they described postponing feedback so as not to interrupt:

> I tend to be a fly on the wall. Afterwards, I'll talk about things they could have done better. (MD 45, Year 1)

Some described a tension between being passive versus active at the bedside:

> On the one hand you want to sit back and see what happens when they ask their questions without too much input. That's hard to sit back and let it spin like that, especially when you see things going inefficiently. (MD 67, Year 1)

In contrast, more experienced teachers played a dynamic and selectively active role in giving feedback at the bedside, balancing immediate and delayed feedback:

> I try to let them interview a patient and get comfortable and I try to not go in for the history.… When I go in to watch the physical, I often sit at the bedside with them and talk it through. Watch them do it and give 'em feedback and then watch them do it and then give them feedback. (MD 24, Year 3)

Table 1

Themes Related to Giving Feedback to Early Clinical Skills Learners: Characteristics of Less Experienced Compared With More Experienced Bedside Teachers

Less experienced teachers	More experienced teachers
Teacher as cheerleader	**Teacher as coach**
Focus on positive, minimize negative	Provide honest, transparent feedback
Provide general, nonspecific feedback	Specific, directive, targeted feedback
Passive teacher role	**Calibrated teacher role**
Follow student lead: "Tell me what you need"	Push student to reflective adult learner role
Remain in background at bedside	Selectively exercise active role at bedside
Give postponed feedback	Balance immediate/delayed feedback
Concern about students' fragility	**Understand students' resilience**
Worry about impact of negative feedback	Know that students want specific, critical feedback
Create a safe environment	**Create a challenging but safe environment**
Deter student discomfort	Expect a response: "You show me," "It's okay not to know," and "We're here to develop everyone's skills"
Limited goals and strategies	**Strategic and goal oriented**
Don't know what works in giving feedback	Have strategies and language for giving feedback
Use trial and error: "Whatever works"	Have goals and expectations: "This works"
Limited skill and comfort addressing behaviors and personality traits (e.g., student anxiety) that limit skill building	Address and name students' limiting behaviors and personality traits (e.g., student anxiety); offer techniques for skill building
Oriented toward students' current needs	**Oriented toward students' developmental trajectory**
Teach without a long-range plan	Know what skills students should have at different stages of development
Minimal use of teams	**Foster environment of team feedback**
Private one-on-one feedback from teacher	Utilize peers and patients in giving feedback

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In another example:

> I interject and show them right there. Or, I'll ask a question. If they're bogged down and dragging, I'll try and pick it up. Or, I'll ask them something that's important. (MD 57, Year 3)

Theme 3: Concern about student fragility/understand students' resilience

Less experienced teachers expressed concern that critical feedback would negatively impact students' egos or impede progress:

> It's the struggle of how to teach in a way that doesn't damage their self-esteem, their ego. Being able to say, "No, you didn't do that right" or "You need to improve" in a way that doesn't make them feel like they're failing.… (MD 36, Year 1)

Some worried about long-term impact:

> [O]ne little negative feedback or so-called constructive comment really can be painful. You start questioning your ability to do this tough job. (MD 56, Year 2)

More experienced teachers expressed understanding that students want specific feedback:

> I've learned that students don't take it personally, they don't get upset. They like feedback. (MD 47, Year 2)

Another said:

> I've sent [the write-up] back to them and said, "You have to rewrite this. This is not appropriate." And "This is totally sloppy. If you do this next year, you'd fail." Then they'd come back and do it again and do it properly. I think they've been receptive to that. (MD 45, Year 3)

Theme 4: Create a safe environment/ create a challenging but safe environment

Less experienced teachers did not want to put students on the spot and tried to deter student discomfort. They described a protective role:

> There's times when we need to not stymie people's morale and rein them in. There's almost a positive parental quality with the mentors…. (MD 88, Year 1)

Another said:

> My strategy is to say, "This is a safe environment and I expect you guys are all going to make lots of mistakes." When they do make a mistake, I say, "That's a mistake. Right? But we're in a safe environment." (MD 69, Year 1)

In contrast, more experienced teachers expected students to demonstrate skills and knowledge, while supporting small-group safety. They tried to contextualize risk taking during this formative period:

> All the students were going to be expected to give feedback to each other and to me and it was going to be a two-way street. That was what I expected and next year was going to be high stakes. And this was a safe environment where people could give feedback, and why not get it now rather than crash and burn next year? (MD 56, Year 2)

Theme 5: Limited goals and strategies/ strategic and goal oriented

Less experienced teachers expressed or demonstrated lack of understanding of what works in giving feedback. Lack of available techniques could frustrate them:

> I've got a couple of students who keep making the same mistakes over and over.… I need to figure out different ways of providing feedback so they hear it. (MD 27, Year 2)

More experienced teachers described strategies and language for giving feedback:

> [J]ust getting it out in the open, learning a language to give feedback that is less hot, has made it much more comfortable. (MD 48, Year 3)

Experienced teachers were more explicit in articulating clear goals and expectations:

> Being explicit about expectations. I tell them they should not use notes, they should memorize.… And I say, "This is how this translates. You have to look back and forth to your notes and that interrupts your interview and makes you go slower than everyone else." (MD 75, Year 2)

Less experienced teachers described limited skill and comfort in addressing behaviors and personality traits that impede students' skill building, such as anxiety:

> If somebody isn't natural in building rapport, it's difficult to teach that. You can't teach it in a didactic manner, so it seems like modeling sometimes helps and then giving feedback about what they did and how they can change.… (MD 36, Year 1)

More experienced teachers addressed and named limiting behaviors and traits and provided approaches that gave a path forward. For example:

> She was really nervous. She blasted through … and the patient said, "You'd make a good lawyer." All her questions were right, she got through everything perfectly and I could say, "You didn't give enough time for the patient to answer the questions and that's why he said what he said. There are techniques you might use to help that." And the next time, she was way more relaxed. (MD 75, Year 2)

Theme 6: Oriented toward students' current needs/oriented toward students' developmental trajectory

Less experienced teachers went into teaching days without a plan:

> I basically ask them every time, "What are you focusing in on today? What do you want me to watch? Is there anything specific you want feedback on today?" (MD 33, Year 1)

More experienced teachers knew what skills students should have at each developmental stage and tailored teaching accordingly:

> I can now gauge, are they meeting what I generally expect at the end of winter quarter? Some people are beyond that and I say, "You are doing everything I expect at end of winter quarter. Now I want you to start focusing on this. These are things I see as your strengths. I'm gonna keep giving feedback on interviewing and physical exam, but you're ready. You're asking questions to rule in and rule out different hypotheses. It's awesome. You need to turn that into a definite plan." (MD 75, Year 3)

Theme 7: Minimal use of teams/fosters environment of team feedback

Less experienced teachers described providing feedback in private:

> [W]e had a meeting for about half an hour and we were developing strategies about how he could do more of the physical exam, what it would take. (MD 24, Year 1)

More experienced teachers used peer students in coaching and giving feedback:

> I gave them the option to observe each other and provide feedback and provided them an outline they could use to give that feedback … they were very insightful. It was the type of feedback you can't give as the mentor, that a peer can give. (MD 12, Year 3)

More experienced teachers also used patients as feedback providers:

> Always I tell the patient, "Mark here is going to present to the other students what he found [out] about you. I want you to make sure you correct him if he's wrong." (MD 54, Year 2)

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Validation results

Our member check focus groups validated the dyadic themes that emerged in this study and provided new analytic insights. Both more and less experienced clinician–teachers agreed with and affirmed the themes in Table 1. Both groups observed, however, that giving feedback at any level of experience is fluid. For example, intentional use of "less experienced skills" may be more appropriate for some students or some settings than more "expert skills." More experienced teachers noted that they use variable skills based on different factors. One said, "You can be a master teacher and have a novice day or have a tough group of students." Another noted that a teacher can deliberately use skills more characteristic of less experienced teachers earlier in the year and move to more nuanced, "expert" skills as students progressed and were ready for more challenge. They observed that less experienced teachers tend to view students as homogeneous groups, whereas more experienced teachers see students' individual variations and adapt feedback to the student's level—confirming the theme of "addressing students' current needs" versus "oriented to students' developmental trajectory."

Less experienced focus group members discussed a "teacher developmental trajectory," comparable to the "student developmental trajectory." One noted that she is still relearning her own clinical skills while teaching them and this may limit her ability to identify problems or weaknesses and provide feedback. Several discussed that as they develop experience, they perceive teachers develop pattern recognition related to student problems or challenges, what requires feedback, and how to give it. One said, "I had two students who struggled this year and I'm grateful—now I have two major diagnoses. I can identify those problems in the future."

Discussion

This study used longitudinal interviews over five years with clinician–teachers working in a new clinical skills teaching program to examine how teaching approaches and skills changed with increasing experience. We focused on one aspect of teaching that emerged in earlier analyses—giving feedback to early learners—as a lens through which to study clinical teachers' progression. Our study identified that the skills of clinician–teachers who teach consistently at the bedside progress rapidly in a number of areas, including knowledge of learners, development of approaches and strategies, and focus on long-term, developmental goals for students rather than limited, short-term, general feedback.

Figure 1 portrays the areas in which we saw discrepancies between less experienced and more experienced teachers and progression with time. Consistent with the concept of pedagogical content knowledge, we saw that the needed knowledge that is relevant to teaching was complex and multifactorial. Teachers learned pedagogical strategies and developed an understanding of students' typical developmental trajectory as well as variations in individual students. They adopted a language for giving feedback. Their concern about student fragility advanced to awareness that most students are resilient and want constructive feedback rather than neutral or positive generalities. Their initial awareness of wanting to create a "safe space" for students evolved to a focus on learning environments that are simultaneously safe and challenging. The nature of challenge itself changed from a threatening phrase to one that is richly nuanced by dynamic and calibrated engagement, setting expectations and pushing students to a new place, all the while maintaining a safe and supportive learning environment. They learned to use both patients and peer students as co-coaches for learners. During the five-year period, faculty received two 2-hour faculty development sessions on giving feedback, which may have augmented their skill development in giving feedback.

Our member check focus groups validated the themes and offered new analytic insights. Just as clinicians develop pattern recognition through an understanding of patient classification and experience with specific patients in different contexts, so do teachers develop pattern recognition of students, both the normal developmental trajectory and variations from the norm, along with associated strategies for addressing normal and variants. Irby[12] elegantly describes this phenomenon and the teaching scripts resulting from the integration of the many forms of knowledge relevant to teaching: medicine, patients, contexts, pedagogy, and learners. In addition, recognition of a "teacher developmental trajectory" in this study speaks to learning to teach as a process with stages and transitions.

Like learning the art and science of medicine, learning to teach is not a simple process dependent on content or pedagogy alone. Our study suggests that teacher development in giving

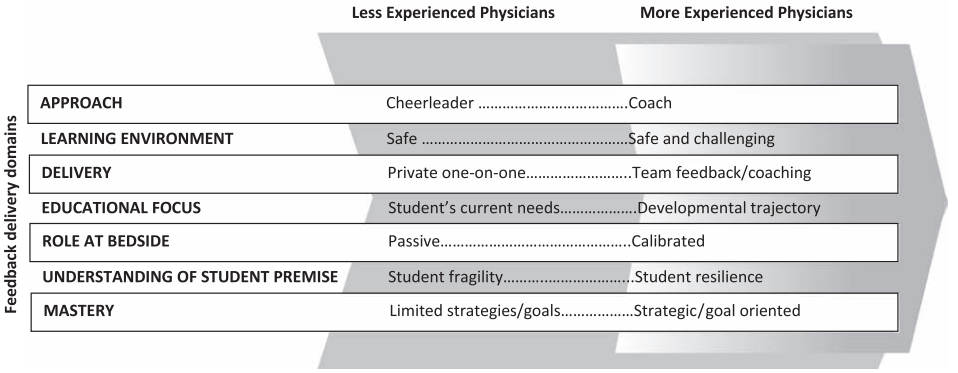

Figure 1 Conceptual model of progression of skills at giving feedback at the bedside.

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feedback requires learning a language for giving feedback; developing strategies for different circumstances, students, and needs; and understanding and incorporating students' developmental trajectory and learning variations in individual students from that trajectory and associated strategies that help guide and tailor feedback. All these intersect with and build on medical knowledge and clinical skills, components frequently considered the foundation of clinical teaching. An outcome—which itself becomes part of the "package" of the experienced teacher—is development of an emotional component, teacher self-confidence, that permits teachers to trust their abilities and instincts.

These data suggest strategies for helping teachers advance in providing feedback to students and in becoming learners themselves in pursuit of teaching mastery. The "workplace environment" is a rich laboratory for learning to teach and may be advanced as such by recognizing and focusing on the areas in which teacher progress must be made, as laid out in this paper. In addition, more experienced teachers may play a role in helping less experienced teachers by joining them as they teach to provide feedback and advice on the observed teachers' skills.[4] Alternately, less experienced teachers can join the more experienced teachers, observe their teaching and feedback approaches, and reflect about their approaches and observations immediately after each session.

Our data also suggest that programs like the Colleges that situate teachers in longitudinal clinical settings with students may have advantages for students and for teachers themselves: sustained, longitudinal teaching appears to lead to clear progress and self-confidence in skills at giving feedback. Occasional or intermittent teaching may not have the same advantages. We suggest that sustained teaching of consistent groups of students within a dedicated teaching program permits faculty to progressively increase their skills at giving feedback and other clinical teaching skills. Faculty development to help teachers obtain skills in giving feedback and other skills is likely to augment and enrich this "on the job" learning. Isolated and/or intermittent teaching is unlikely to have the same impact, and the presence of a community of peer clinician–teachers with whom faculty development and common or similar experiences are shared, as occurs in the Colleges program, is likely to add to the impact.

This study has several limitations. First, new clinical teachers are sometimes relearning basic bedside clinical skills themselves after functioning in advanced or specialized practices. As skills improve, so will their feedback and overall teaching skills. Shulman's concept[23,24] recognizes the high value of content and skill in the multifactorial rubric of effective teaching.[12,20,21] Second, during clinical clerkships, students, residents, and attending physicians combine caring for patients with teaching students. In the Colleges, clinical teachers focus on teaching early learners, which might change their teaching. Third, we did not consider in our analyses the role that faculty development may have played in teachers' skill development—whether within or outside the College faculty setting. It is possible that the role of faculty development was significant. Fourth, these interviews were conducted between 2003 and 2007 and may be more reflective of teachers at that time; data from the member validation, however, suggest that the data and insights remain fresh. Finally, our study examined teaching with preclinical learners at the bedside. Our findings may not generalize to more advanced learners in other settings.

Despite these limitations, our data suggest that learning to give feedback to early learners in the development of clinical skills involves multiple areas for attention and that sustained teaching in the workplace is an excellent environment for advancing teaching skills. The authors believe that this "on the job," sustained (as opposed to episodic or occasional) experience will be best supported by ongoing faculty development related to giving feedback. Targeted faculty development from experienced teachers who recognize the areas for attention identified in this paper may help new teachers to advance their skills efficiently and effectively.

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