

Doctor Coach: A Deliberate Practice Approach to Teaching and Learning Clinical Skills

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Abstract

Problem

The rapidly evolving medical education landscape requires restructuring the approach to teaching and learning across the continuum of medical education. The deliberate practice strategies used to coach learners in disciplines beyond medicine can also be used to train medical learners. However, these deliberate practice strategies are not explicitly taught in most medical schools or residencies.

Approach

The authors designed the Doctor Coach framework and competencies in 2007–2008 to serve as the foundation

for new faculty development and resident-as-teacher programs. In addition to teaching deliberate practice strategies, the programs model a deliberate practice approach that promotes the continuous integration of newly developed coaching competencies by participants into their daily teaching practice.

Outcomes

Early evaluation demonstrated the feasibility and efficacy of implementing the Doctor Coach framework across the continuum of medical education. Additionally, the Doctor Coach framework has been disseminated through national workshops, which

have resulted in additional institutions applying the framework and competencies to develop their own coaching programs.

Next Steps

Design of a multisource evaluation tool based on the coaching competencies will enable more rigorous study of the Doctor Coach framework and training programs and provide a richer feedback mechanism for participants. The framework will also facilitate the faculty development needed to implement the milestones and entrustable professional activities in medical education.

Problem

A hospitalist concludes a particularly satisfying month on the teaching service. She reflects on how easily team members shared learning goals, appreciated being observed, eagerly responded to corrective feedback, promptly integrated her suggestions into their daily practice, and proactively turned to her for more feedback. She questions why this group of learners responded so effectively to her “treat me like your coach” approach. The hospitalist then realizes that her team consisted of a collegiate swimmer, a professional dancer, and a business school graduate—a “dream team” of learners who had already mastered complex skills at a high level through deliberate

practice and who thrived in a coaching relationship. These elite learners were able to apply deliberate practice strategies to their medical education; she wonders if these strategies could be effectively taught to other medical learners.

The 2010 Carnegie Foundation Report “Educating Physicians: A Call for Reform of Medical School and Residency” recommended a pedagogical approach that is focused on developing learners’ habits of continuous inquiry, learning, and improvement throughout medical education.¹ The report also promotes training that is situated in and distributed throughout the practice environment, is participatory in nature, and progressively challenges learners as their skills advance.¹ To achieve these goals, recent attention has been focused on the role of deliberate practice as a path to professional expertise. Deliberate practice strategies have been defined as “highly structured activities explicitly directed at improvement of performance in a particular domain.”² These activities, all designed to improve skills performance, include repetitive and structured performance of intended psychomotor and cognitive skills, ongoing rigorous skills assessment, and specific feedback.²

In medicine, the use of deliberate practice strategies is associated with better clinical skills performance at any given level of training.³ Although medical students at later stages of training have been shown to use more deliberate practice strategies than their more novice colleagues, studies demonstrate that not all students routinely use these strategies, nor do they develop them sufficiently early in their training.³ Rather than arbitrarily acquiring these strategies over time, learners would benefit from instruction about how to intentionally develop them. Despite the known benefits of using deliberate practice strategies to learn clinical skills, there is limited literature that articulates effective pedagogical approaches to systematically teach deliberate practice strategies to medical learners.

We created the Doctor Coach framework to train faculty, residents, and community preceptors to facilitate learners’ development of deliberate practice strategies. The Doctor Coach framework is an integrated, comprehensive, and structured approach that could be practically implemented for faculty development and resident-as-teacher programs.

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Approach

Framework development

We designed our Doctor Coach framework (see Figure 1) in 2007–2008 using literature in disciplines beyond medicine to determine aspects of deliberate practice training that were applicable to medical education. We recognized that across disciplines such as sports, art, and business, the one-to-one relationship between a coach and learner was critical to both improve skills performance and help the learner more effectively apply deliberate practice strategies to improve his or her performance with progressively less dependence on the coach over time. Because the coaching model has been effectively used to teach deliberate practice strategies in many disciplines and is well understood by any former athlete, artist, business person, or even spectator, we found it an ideal model around which to frame our deliberate practice training programs. We also noted that the critical observation skills derived from the art appreciation literature, which are already being used in medical schools to teach patient observation skills to students, were also applicable to teaching clinical coaches to observe learners.

From this collective body of coaching literature, we recognized that although the skills being learned differed between coaching disciplines, the fundamental coaching strategies were similar and applicable to teaching clinical skills in medicine. We developed the Doctor Coach framework to emphasize the

coach–learner relationship and distinctly outline all of the steps required to be an effective coach: establishing a coaching environment, deconstructing expertise through the use of skill milestones, eliciting a learner’s self-assessment, purposefully observing a learner’s performance, synthesizing a coach’s assessment of the learner’s performance, promoting reflection, creating a feedback dialog, setting goals, and facilitating practice. The cycle repeats as many times as needed until a skill is mastered, and it concludes with summative evaluation. We then derived an inventory of clinical coaching competencies that are achieved when the coaching strategies are employed as the coach progresses through the steps in the clinical coaching cycle.

Program design and implementation principles

To design and implement effective coach training programs for participants (faculty, residents, and community preceptors) based on the Doctor Coach framework, we defined the foundational principles on which our programs should be built through a review of the literature on faculty development, resident-as-teacher, adult learning theory, cognitive neuroscience, self-regulated learning, and cognitive apprenticeship (see List 1). With these principles in mind, we used a deliberate practice design for each program that provided coaches-in-training with (1) core concepts and practical coaching tools, (2) opportunities to practice using the tools in their daily coaching environment and to reflect on those experiences, and (3)

reinforcement of core concepts over time. We integrated the strategies and tools shown by others to be effective in medical education—teaching styles, observation skills, reflections, feedback dialogues, and setting goals—and then we designed our own tools to fill in gaps where no literature existed.

Our programs use experiential learning principles⁴ to address the Carnegie Foundation recommendations¹: we enable participants to *progressively develop* coaching competence by *participating* in primary learning experiences that are *situated* in the everyday coaching experiences that occur between participants and learners.

Our programs begin by introducing the expert “Doctor Coach” through student quotes, pictures, and videos to help participants create a mental image of the expert coach performance to which we hope they will aspire. After explaining the Doctor Coach framework, we ask participants to self-assess, using the coaching competencies, and set goals to improve their coaching. We structure subsequent didactic sessions as follows:

1. Facilitated group discussion: Participants *reflect* on their own clinical coaching experiences related to the coaching competency focused on during the session.
2. Interactive presentation: Participants *learn* how to develop a specific coaching competency by using a related coaching tool. After a brief primer on the educational theory behind the given coaching competency, we introduce a Doctor Coach tool that deconstructs the competency into its component steps. We model those steps for the participants with examples or videos and then have the participants practice using the tool through role-play or other group activities.
3. Planning for clinical coaching practice: Participants *plan how they will practice* with real learners using the tool that was introduced.

Between didactic sessions, participants practice coaching their clinical learners using the tools. Subsequent didactic sessions open with participants returning to their coaching goal to reflect on and document their progress.

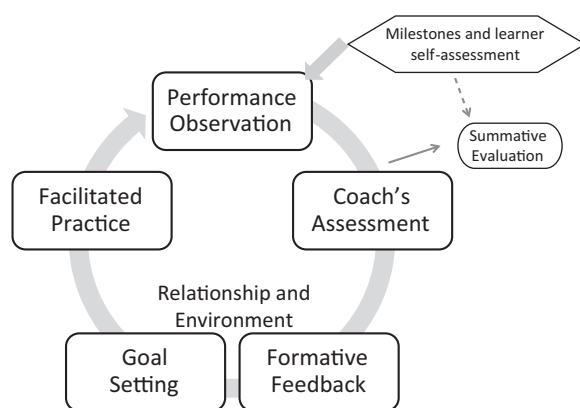


Figure 1 In the Doctor Coach framework, the coach–learner relationship is used to create a coaching environment in which the coach deconstructs expertise through the use of skill milestones and elicits a learner’s self-assessment. He or she then purposefully observes a learner’s performance, synthesizes a coach’s assessment of the learner’s performance, promotes reflection by creating a feedback dialogue, sets goals, and facilitates practice. The cycle repeats as many times as needed until a skill is mastered, and it concludes with summative evaluation.

List 1

The Doctor Coach Framework Foundational Principles

Goal

- To design training programs that ensure participants develop both a mental model and the competencies needed to perform as an expert clinical coach with their learners.

Approach

- The *coaching framework* should focus on the relationship between the coach and learner as well as their bidirectional interactions.
- A series of *clinical coaching competencies* should be used to deconstruct coaching expertise into components that can be understood and practiced by the participants in any discipline or context.
- Each *coach training session* should be grounded in the framework to provide the context for each coaching competency and enable the integration and reinforcement of the lessons over time.
- Participants should be trained to tailor each *clinical coaching encounter* to the specific learner needs, context, and other circumstances.

Methods

- Coaching competency development should be *grounded in the everyday teaching experiences* that participants have with their real life learners.
- Coach training sessions should begin with a discussion of the participants past coaching experiences to help them *reflect on and consolidate their real life experiences* as well as identify the coaching competencies that they most need to develop.
- Each training session should *actively model* select coaching competencies for the participants and provide them with *opportunities to practice*.
- Tools should be used to help participants *translate the coaching competencies* into their everyday coaching practice.
- Participants should *leave each coaching training session with a plan* for how to practice using the tools in order to develop their coaching competencies.

Outcome

- Learners who are well coached will internalize the coaching competencies and ultimately develop the ability to coach themselves.

Each training session reinforces previous sessions and allows participants to progressively integrate coaching competencies as they are learned over time, which we believe is the best method to truly master complex coaching competencies. For example, effectively discussing feedback requires the coach

to first establish a coaching relationship, observe and assess learner performance, ask for the learner's self-assessment, and then discuss goals for future practice. We do not believe that it is possible to be competent in discussing feedback with a learner without using the other coaching competencies in the framework. The integration of coaching competencies, longitudinal deliberate practice program design, and distributed practice distinguish our Doctor Coach programs from other faculty development and resident-as-teacher programs.

Outcomes

Feasibility and efficacy

To examine the feasibility and efficacy of applying the Doctor Coach framework across the continuum of medical education, we implemented longitudinal workshops in multiple different settings as well as an online program, which are summarized in Table 1. Additionally, the Doctor Coach framework has been disseminated through national workshops, which have resulted in other institutions applying the framework and competencies to develop their own coaching programs. To date, we have measured faculty and resident satisfaction with the programs and national workshops through paper-based and online surveys as well as pre/post medical

Table 1

Programs Based on the Doctor Coach Framework*

Participants	Time frame	Number of participants	Format
Pediatric residents at the Children's Hospital at Dartmouth	2007–present	21 residents per year	5–6 didactics per year (half focused on coaching competencies and half combined with other clinical-skills-based topics), with longitudinal coaching experience in routine rotations
Pediatric faculty at Children's Hospital at Dartmouth	2011–present	49 total faculty	1-hour workshops every 1–2 months focused on coaching strategies, with longitudinal coaching experience in routine teaching encounters
Medical students at Geisel School of Medicine at Dartmouth	2010, 2012	2 medical students	1-month teaching elective that includes training about Doctor Coach framework, competencies and tools, observations of teaching faculty, and practice teaching sessions
Community preceptors at Geisel School of Medicine at Dartmouth	2007–present	30–60 community preceptors per year	Annual 1-day workshop, concluding with a coaching plan and follow-up by e-mail 6 months later
Community preceptors at Geisel School of Medicine at Dartmouth	Launch 2013	10 pilot faculty members	15- to 20-minute online interactive continuing medical education modules with an individualized learning plan. Participants practice coaching competencies in their clinical setting and return to the online program to reflect on their experiences.
National pediatric residency and medical student educators	2011, 2012, 2013	30–100 educators per session	1.5- to 2-hour interactive workshops at national medical education meetings

*The Doctor Coach framework, designed in 2007–2008, was developed to train faculty, residents, and community preceptors to facilitate learners' development of deliberate practice strategies.

student evaluation of resident coaching by students blinded to the resident-as-teacher intervention. Our early outcomes demonstrate that the Doctor Coach framework is effective and feasible to implement. Participants have expressed an understanding of the framework and endorsed its application to teaching and learning in medical education. Feedback from local, regional, and national educators, as well as learners, has been used to further refine the model.

Ongoing costs of the current resident-as-coach and faculty development programs include two to four hours per month for faculty development instructors to prepare and teach workshops, as well as time to collaborate with training directors and administrative personnel to ensure that the coaching tools are integrated into the resident coaching practice with learners. The cost to develop the online modules was approximately \$13,000. During session discussions, faculty endorse that little additional time is required to integrate coaching into their daily teaching practice once they are comfortable using the strategies. Some faculty have noted that using the strategies actually improves teaching efficiency, which has led to our slogan, “Don’t teach more, coach better.”

Although implementing the coaching approach requires thoughtful restructuring of the teaching development curricula, we believe we have shown that the Doctor Coach framework is feasible to implement across the continuum and could be implemented broadly without needing significantly more faculty or program time. The key to the program’s success lies in taking advantage of the repeated practice that is already occurring when faculty and residents are teaching clinically, and then using the existing didactic time for coaches-in-training to consolidate their learning from those experiences through reflection and targeted coaching lessons in order to plan their future clinical coaching experiences.

National implications: Operationalizing essential coaching competencies

As medical education moves toward a more competency-based structure,¹ direct observation, feedback, and facilitation of deliberate practice are becoming essential teaching competencies for

faculty and learners. The Doctor Coach framework intentionally supports the implementation of contemporary concepts in medical education.⁵ The first step in the Doctor Coach framework uses the concepts of milestones (which learners must reach on the path toward developing expertise) and entrustable professional activities (EPAs) (the activities that learners must be able to perform on their own by the end of training) to help coaches “deconstruct expertise” in order to discuss these assessment benchmarks and expectations with their learners. In the next steps of the cycle, coaches use milestones to inform their observations and EPAs to help synthesize their assessments. Continuing through the rest of the steps in the Doctor Coach framework, coaches rely on milestones to make their feedback more specific, focus their goal setting with learners, create targeted practice plans, and facilitate their learners’ implementation of the mutually agreed-upon plans. The Doctor Coach framework assists faculty and residents with understanding the utility and practical implications of the milestones and EPAs. The framework also helps coaches create a deliberate practice environment for their learners, as well as themselves, that facilitates the development and modeling of expertise.

Next Steps

We are currently refining our coaching primers, videos, tools, and online modules and creating resources to aid educational leaders in implementing Doctor Coach at their own institutions. The materials will be available to educational leaders as well as individuals who want to work on improving their coaching skills through our Doctor Coach Web site (www.doctor-coach.org). We are also designing outcome measures to further evaluate the efficacy of the program’s components.

Although others have studied some tools to evaluate discrete observable coaching behaviors, we see the need for a comprehensive coaching evaluation that also captures the important internal cognitive work of coaching, such as preparation, reflection, and assessment. To that end, we are also developing a multisource coaching evaluation including self, learner, and third-person

observer ratings to accompany the faculty development and resident-as-coach programs. We believe that providing integrated feedback to our coaches-in-training will enable them to more autonomously engage in deliberate practice about their own coaching. We are also developing a parallel set of competencies and training materials to teach learners how to improve their own “coachability” and deliberate practice skills, which we hope will enable them to optimize their training time with their coaches.

Through repeated cycles of the Doctor Coach framework during daily practice, both coaches-in-training and their learners are able to internalize and master their respective coaching and learning competencies and ultimately become their own coach—the essence of lifelong learning. We believe that the Doctor Coach framework serves a pivotal role in the transformation of medical education envisioned in the Carnegie Foundation report. Our Doctor Coach framework provides residents and faculty with the necessary tools to coach and assess learners as they progress through their training to develop professional mastery in medicine.

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References

- 1 Cooke M, Irby D, O'Brien B. Educating Physicians: A Call for Reform of Medical School and Residency. San Francisco, Calif: Jossey-Bass; 2010.
- 2 Ericsson KA. Deliberate practice and the acquisition and maintenance of expert performance in medicine and related domains. *Acad Med.* 2004;79(10 suppl): S70–S81.
- 3 Duvivier RJ, van Dalen J, Muijtjens AM, Moulaert VR, van der Vleuten CP, Scherpbier AJ. The role of deliberate practice in the acquisition of clinical skills. *BMC Med Educ.* 2011;11:101.
- 4 Kolb DA. *Experiential Learning: Experience as the Source of Learning and Development.* Englewood Cliffs, NJ: Prentice-Hall; 1984.
- 5 Carraccio CL, Englander R. From Flexner to competencies: Reflections on a decade and the journey ahead. *Acad Med.* 2013;88: 1067–1073.