

Using a Learning Coach to Develop Family Medicine Residents' Goal-Setting and Reflection Skills

PAUL GEORGE, MD
SHMUEL REIS, MD, MHPE
MARGARET DOBSON, MD
MELISSA NOTHNAGLE, MD, MSc

Abstract

Background Self-directed learning (SDL) skills, such as self-reflection and goal setting, facilitate learning throughout a physician's career. Yet, residents do not often formally engage in these activities during residency.

Intervention To develop resident SDL skills, we created a learning coach role for a junior faculty member to meet with second-year residents monthly to set learning goals and promote reflection.

Methods The study was conducted from 2008–2010 at the Brown Family Medicine Residency in Pawtucket, Rhode Island. During individual monthly meetings with the learning coach, residents entered their learning goals and reflections into an electronic portfolio. A mixed-methods evaluation, including coach's ratings of goal setting and reflection, coach's meeting notes,

portfolio entries, and resident interviews, was used to assess progress in residents' SDL abilities.

Results Coach ratings of 25 residents' goal-setting ability increased from a mean of 1.9 to 4.6 ($P < .001$); ratings of reflective capacity increased from a mean of 2.0 to 4.7 ($P < .001$) during each year. Resident portfolio entries showed a range of domains for goal setting and reflection. Resident interviews demonstrated progressive independence in setting goals and appreciation of the value of reflection for personal development.

Conclusions Introducing a learning coach, use of a portfolio, and providing protected time for self-reflected learning allowed residents to develop SDL skills at their own pace. The learning coach model may be applicable to other residency programs in developing resident lifelong learning skills.

Editor's Note: The online version of this article contains the 5-point rating scale used to assess resident skills in goal setting and self-reflection used in this study.

Introduction

With medical knowledge increasing exponentially and health care changing rapidly, physicians must adapt and learn throughout their careers. The goals of medical

education must shift from imparting knowledge, which rapidly becomes obsolete, to teaching metacognitive skills, which allow active regulation and monitoring of one's thinking and learning processes.¹ Self-directed learning (SDL) is a set of metacognitive skills, or ways of "thinking about thinking," that can support physician lifelong learning.² A systematic review of SDL in the health professions' literature provides the following framework for SDL: the educator as a facilitator of a process that involves diagnosing learning needs, formulating learning goals, identifying appropriate resources, implementing learning strategies, and evaluating learning outcomes.² A subsequent review comparing SDL approaches to traditional teaching methods noted that SDL resulted in improved medical knowledge and appeared beneficial to residents and attending physicians.³ Additionally, the Accreditation Council for Graduate Medical Education's (ACGME's) practice-based learning and improvement competency requires resident self-evaluation and lifelong learning.⁴

In a previous study, we found that our graduating residents lacked confidence in their ability to manage their learning, especially in clinical settings.⁵ Residents rarely engaged in goal setting or reflection on learning, and

Paul George, MD, is an Assistant Professor of Family Medicine at the Warren Alpert Medical School of Brown University; **Shmuel Reis, MD, MHPE**, is Faculty of Medicine in the Galilee, Bar-Ilan University, Safed, Israel; **Margaret Dobson, MD**, is a Clinical Lecturer of Family Medicine at the University of Michigan; and **Melissa Nothnagle, MD, MSc**, is an Associate Professor of Family Medicine at the Warren Alpert Medical School of Brown University.

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Corresponding author: Paul George, MD, Department of Family Medicine, 111 Brewster Street, Pawtucket, RI 02860, 401.729.2753, Paul_George@brown.edu

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expressed a need for more guidance in managing their own learning. We identified a need to coach residents to develop SDL skills. In academic medicine, faculty often serve as mentors for residents. Mentoring involves a relationship whereby a more senior physician facilitates the development of a junior colleague with emphasis on professional development. Mentors typically supply information, advice, and practical and emotional support, especially in difficult circumstances, with an emphasis on professional development.^{6,7} The difference between coaching and mentoring is that the “coaching [relationship]...addresses performance in some aspect of an individual’s work or life...”⁸ We describe the implementation and mixed-method evaluation of an intervention using a learning coach to enhance residents’ SDL skills.

Methods

Setting

We conducted this study from 2008–2010 at the Brown Family Medicine Residency in Pawtucket, Rhode Island. The residency is located in a community hospital. The intervention group consisted of 2 consecutive classes of second-year residents ($n = 25$). The hospital’s Institutional Review Board approved the study and participants gave informed consent. Residents could opt out of the program evaluation.

Intervention

We designed a multifaceted intervention to promote SDL in our residency, which included monthly individual sessions with a learning coach. Other components of the intervention, such as an electronic learning portfolio and a senior resident discussion forum to address the hidden curriculum, are described elsewhere.⁹

We created the role of a learning coach from the cognitive apprenticeship model of Collins,^{10,11} which uses 6 strategies to develop learners’ cognitive skills: modeling, coaching, scaffolding, articulation, reflection, and exploration. The learning coach was a family medicine faculty member who would work with each resident to practice SDL skills on a regular basis and facilitate resident acquisition of SDL skills in one-on-one meetings. These meetings focused on setting appropriate learning goals based on learning needs identified with the help of the coach, choosing strategies to meet these needs, and reflecting on successes and failures.

We scheduled the learning coach to meet individually with each resident on a monthly basis for 1 hour. One hour per month of protected time was built into resident schedules for this meeting. The coaching hour was divided between developing SDL skills and point-of-care evidence-based

What was known

Many residents do not formally engage in self-directed learning skills, such as self-reflection and goal setting, which can facilitate learning throughout a physician’s career.

What is new

A junior faculty member served as a learning coach and met monthly with second-year family medicine residents during protected time to set learning goals and promote reflection.

Limitations

Single-specialty, single-site study, and low sample size limit generalizability.

Bottom line

Engaging with a learning coach and having protected time allowed residents to develop self-directed learning skills at their own pace.

medicine skills; these 2 purposes are often interwoven, particularly when learning goals focus on medical knowledge.¹² The coach facilitated identification of learning needs and helped the resident form appropriate learning goals and identify resources and strategies to achieve these goals. At subsequent meetings the coach supported reflection on interim learning experiences, achievement of learning goals and successes and failures in this effort, and generation of new goals. Residents documented their goals and reflections in an electronic portfolio during these meetings. Residents met with an assigned faculty advisor at least semiannually to review their performance and progress in residency. Faculty on individual rotations also met with residents to encourage goal setting and provide feedback on performance. Faculty advisors had access to their advisees’ portfolios.

We selected a recent graduate of the residency to serve as the learning coach, and reserved one-half day per week (0.1 full-time equivalent) in the individual’s schedule for coaching residents. From having recently completed residency, the learning coach had personal knowledge of local resources for clinical learning. A senior faculty member mentored the learning coach before and during the intervention in quarterly meetings, which included observations of coaching sessions. The learning coach also underwent additional formal medical education training both before and during the coaching intervention. The senior faculty member was available as needed for consultation if sensitive topics, such as resident mental health, came up in coaching sessions. The resident introduction to the program included guidance about the role of the coach as compared to the faculty advisor, and when issues more appropriate for the advisor came up, the coach would facilitate his or her involvement and support.

Additional details of the program have been previously described.⁹

Evaluation

We collected quantitative and qualitative data from multiple sources to evaluate the impact of the learning coach.

1. Learning coach observations

From a review of the SDL literature and on discussions with faculty, we developed a 5-point rating scale to assess resident skills in goal setting and reflection (provided as online supplemental material). We established content validity of the scale by involving expert faculty in its development. We established construct validity through triangulation with analysis of resident goals and reflections. The learning coach rated each resident after each meeting and also recorded brief reflections on the meeting. We sequestered the coach's ratings and notes after each meeting to minimize influence on future ratings. We assessed changes in the coach's ratings from the first to last sessions. Two researchers independently read all the coach's meeting notes for each resident to identify important themes, then met together to reach consensus on key themes and changes over time.

2. Portfolio entries

During the coaching meetings, residents recorded goals and reflections by using a web-based portfolio (MyFolio within E*Value, Minneapolis, Minnesota). Two members of the research team reviewed all portfolio entries and identified key content areas included in the goals and reflections and discussed them to reach consensus.

3. Resident interviews

We conducted 2 in-depth semistructured interviews with the first class of residents to participate in the intervention to promote SDL; the first ("intervention interview") occurred during the intervention year (participants' second year of residency) and the second ("postintervention interview") during the year after the intervention (participants' third year of residency). Interview questions explored residents' views about self-directed learning, whether they engaged in goal setting and reflection, and their views of the learning culture in residency. A member of the research faculty who was not involved in the intervention conducted the interviews, which were recorded and transcribed. A team of 4 researchers analyzed the transcripts by using a template analysis approach. Each researcher independently read all the transcripts, and the group met regularly in person and by conference call to discuss each transcript in depth. The team analyzed the intervention interviews followed by the postinterven-

tion interviews. Two team members then reanalyzed paired interviews by participant, attending particularly to changes over time by each theme in the template. The team of 4 reconvened to discuss higher-order interpretations and interrelationships across themes; we verified findings through reexamination of transcripts and coded data and resolved differences in interpretation through group discussion.

Results

Twenty-five residents participated in the intervention and attended an average of 5.5 meetings with the coach (range, 3 to 8 sessions). We reviewed portfolio entries for these same 26 residents. We completed both intervention and postintervention interviews for 11 residents in the first intervention year. We did not conduct structured interviews in the second intervention year.

Goal Setting

Resident portfolios documented goals in several domains, often focusing on medical knowledge, for example "genetic testing in children," "geriatric assessments," or "indications for colposcopy." Other domains included procedural proficiency, teaching skills, communication skills, evidence-based medicine resource use, and personal well-being.

Notes from the learning coach demonstrated that most residents progressed from simpler to more complex goals as well as greater independence in generating and accomplishing goals. By the end of the intervention year, many were able to list multiple goals "without very much coaching." For example, one resident's goal during her first meeting with the learning coach was, "I would also like to learn more about genetic testing in children." At her last meeting with the coach, the same resident said, "I would also like to get a firm grip on preventive medicine by focusing on this. I am going to try to achieve this by spending time with Dr P and Dr M to help with pediatric and gynecology preventive care."

Common themes in resident goal setting identified in the coach's notes included career goals, perceived clinical gaps and strategies to remedy these gaps, adjustments to the senior role (supervision and teaching skills), learning styles, and efficiency in the hospital and the clinic. Most sessions included both short- and long-term goal setting. Learning coach ratings of residents' goal setting skills increased from a mean of 1.9 (representing almost complete dependence on the learning coach) during session 1 to a mean of 4.6 (indicating independence from the learning coach) during the final session (FIGURE 1; $P < .001$).

Analysis of resident interviews during the intervention showed that most found the meetings with the coach "useful," providing the motivation they needed to set goals

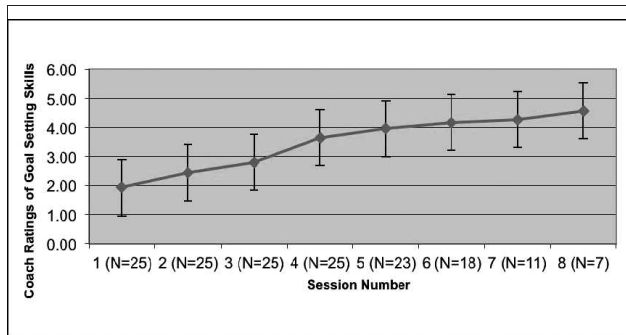


FIGURE 1 | AVERAGE COACH RATING OF GOAL SETTING

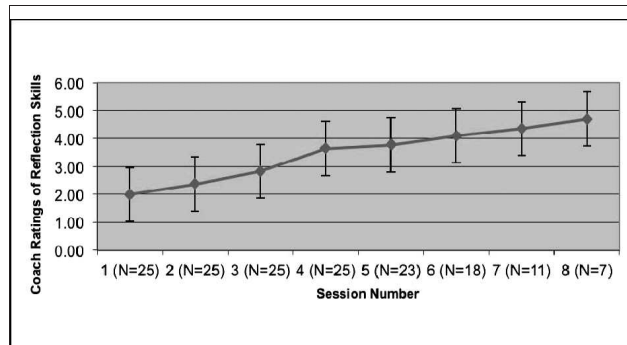


FIGURE 2 | AVERAGE COACH RATING OF REFLECTION SKILLS

regularly when they had not been doing so previously. One articulated this as follows: “I learn more if I go in with a goal and I achieve it,” acknowledging that “I would not do that [goal setting in advance] on my own.” After the intervention, most participants expressed more independence and confidence in their goal setting; they were now “in the habit” of setting goals more frequently and “trying to think ahead” about how to get the most from their educational experiences. Some recognized that they were setting more specific goals and discussing them with peers and faculty mentors. Residents reported that their experience with the coach served as a “stepping stone,” helping them move toward independence in goal setting. Many residents stated they were regularly setting and carrying out goals on their own without the help of the coach, though without the structured meetings, most were no longer consistently documenting their goals in writing.

Reflection on Learning

Common themes extracted from residents’ reflections as recorded in their portfolios included activities during clinical rotations (successes and struggles), decisions regarding future career plans, growth as teachers, learning needs related to future plans or rotations, and domains in which residents felt anxious or uncertain.

Review of the coach’s notes demonstrated that residents progressed in their reflective ability. Most needed assistance from the coach at first but became more independent with time, producing “higher-order” goals and even sharing how they “put some into action.” Learning coach ratings of the residents’ reflection skills increased from a mean of 2.0 (suggesting dependence on the learning coach to facilitate reflection) during session 1 to a mean of 4.7 (suggesting independent reflective capacity) during the final session (FIGURE 2 ; $P < .001$).

Resident interviews revealed major changes in attitudes about reflection during the course of the intervention. In the early interviews, reflection was a less prevalent theme,

though residents who mentioned it attested to the value of dedicated time for reflection and the structure for reflection that the coach meetings provided. After a year of meeting with the coach, most residents came to highly value reflection, seeing it as a tool for self-improvement and growth. According to one, “if you don’t reflect, there’s no room for improvement,” and accordingly, many reflected on how they were meeting their learning goals or on difficult clinical experiences. Others found the mentored reflection time helpful for their professional development and career planning; as one resident noted, “[the coach] really helped me kind of frame...what I’m going to do in my future practice.” Several residents mentioned that they disliked the portfolio as a platform for reflection, and some preferred using their journal for written reflection.

Discussion

By providing protected time, structure, and guidance for SDL, our intervention may have improved second-year family medicine residents’ ability to independently set goals and reflect on their learning—essential skills for lifelong learning. The resources required were minimal, with 0.1 full-time equivalent allotted for the learning coach, and approximately one-half day per month for the initial training of the inaugural learning coach and subsequent learning coaches. Residents reported that they looked forward to coaching sessions, and the learning coach remains an integral part of our training program. Scheduled, protected time with the learning coach was essential to the program’s success, allowing residents to develop SDL skills at their own pace. The coach facilitated the reintegration of learning and clinical care, helping residents to generate strategies to address their learning goals through their clinical experiences. In addition, the coach provided the external guidance residents felt was needed to gain confidence and skill in SDL strategies, and provided

motivation to begin to engage in goal setting and reflection. Over time most residents appeared to develop their own internal motivation to engage in these activities, and many were doing so on their own outside of the coach meetings.

Our residents often set goals directly related to other ACGME competencies, such as systems-based practice (eg, efficiency in the clinic) and practice-based learning and improvement (eg, teaching and supervision skills).

Concerns about confidentiality appeared to limit documentation of some areas of self-reflection in the portfolio. During the coaching sessions, residents reflected on patient care issues or on interactions with faculty or peers they chose not to record. To ensure trust and safety for learners, programs should clarify the limits of confidentiality for electronic portfolios. Residents sometimes raised personal health issues in meetings with the coach, which seems natural in the context of a trusting relationship, but these at times displaced the SDL intention of the session. Having mechanisms and support for faculty in a coaching role to address such concerns and ensure access to appropriate assistance is essential.

There are several limitations to our study. It was conducted at a single site with a small sample and without a comparison group, limiting generalizability. The learning coach, who had a vested interest in improving resident SDL skills, provided some of the evaluation data. Although our results demonstrated improvement, this could be a maturation effect that would have occurred in the absence of an intervention. Finally, in-patient service and elective schedules affected attendance at monthly meetings.

Conclusion

Providing a learning coach and protected time for self-reflection to residents promoted the development of SDL

skills by helping residents to identify learning needs, set learning goals, and reflect on their learning; our qualitative and quantitative outcomes suggest that we achieved this. From our experience, we propose this approach as a new and feasible model to develop SDL skills in residents. Future research should focus on reproducing these results on a larger scale and across multiple institutions, other interventions for teaching SDL skills, and/or long-term retention of these skills.

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Erratum

This corrects the sample size in the sentence published in the June 2013 *Journal of Graduate Medical Education*: George P, Reis S, Dobson M, Nothnagle M. Using a learning coach to develop

family medicine residents' goal-setting and reflection skills. *J Grad Med Educ.* 2013;5(2):289–293. “We reviewed portfolio entries for these same 25 residents.”