Education Research: A program perspective on learning how to teach

Kevin N. Sheth, MD
Timothy W. Yu, MD
Keith A. Vossel, MD
Tracey A. Cho, MD

Address correspondence and reprint requests to Dr. Kevin N. Sheth, Massachusetts General Hospital, Department of Neurology, 55 Fruit Street, Blake 12 Neuro-ICU, Boston, MA 02114
kshethmd@gmail.com

> Thank you so much. I am flattered. This is like being rewarded for eating chocolate cake.
> —C. Miller Fisher, upon receipt of a residency teaching award[1]

Not surprisingly, as neurologists we tend to take special pride in our role as teachers. It is common for trainees and attendings to cite examples of excellent teachers when asked to reflect upon their own initial attraction to neurology. This intangible bond between student and teacher often occurs outside of the classic setting of the lecture hall or conference room. Instead, it takes place on the wards and in the clinics, admixed with the daily chores of clinical care. This type of teaching eschews lecterns and problem sets in favor of observation, progressive responsibility, and apprenticeship; it is how we become mature physicians. As residents, fellows, and clinical staff, we participate in this educational process every day. It is surprising, then, how scant resources are spent teaching us "how to teach." Being a good teacher is an art, backed by both time-honored techniques and evolving innovations. Too often, we tend to lecture rather than promote interactive dialogue or assess without providing adequate feedback.[2] We can be more effective if we take the time to learn a more systematic approach. For example, trainees often arrive at each level of training with varying degrees of experience (e.g., some stroke fellows may have more experience administering IV-tPA than others, depending on their institution of residency).[3] Assessing a student's level of understanding, setting expectations, and then evaluating competencies all require a sophisticated understanding of the trainee as a learner.

Recently, we administered a Web-based survey to all of the neurology residents at our institution aimed at sampling attitudes toward teaching among our trainees. Surveys were sent 2 months after a mid-year retreat. (A copy of the survey is available on the *Neurology*® Web site at www.neurology.org.) A total of 91% envisioned spending at least 25% of their postgraduate time devoted to teaching. Remarkably, 54% felt that we did not have sufficient training on how to teach junior colleagues, medical students, residents, and other health care practitioners. Furthermore, 82% reported that they did not feel they had sufficient time to do an adequate job teaching rotating medical students. These initial responses suggest that residents may seek greater confidence in their skills as teachers, as well as an increase in the time and resources allocated to obtaining the required skill sets.

As part of our training program, the program directors and chief residents organize biannual resident–faculty retreats. Usually, this is a time for assessing resident morale, faculty mentoring, and advising on career planning. This year, in response to trainee interest, we developed a workshop in which junior residents were taught how to teach in preparation for leading our inpatient neurology services and assisting with medical student teaching on rounds. Our chief residents and two of our clerkship directors, who are also members of the Academy at Harvard Medical School, led the session. The Academy is an organization whose purpose is to recognize efforts in teaching and promote education scholarship. Specific topics covered included asking residents to describe characteristics of particularly effective teachers that they remembered, assessing competency, providing effective feedback, and overcoming problem situations such as overly aggressive (or timid) students. Residents were encouraged to share anecdotes of their teaching experiences (much like cases are shared at morning report).

The session, a first for our program, utilized a number of different tools. Handouts describing methods for providing feedback and running an inpatient service were distributed by the clerkship directors, as references for later during the year. We planned a set of brief role-playing exercises

Supplemental data at www.neurology.org

From the Massachusetts General Hospital & Brigham & Women's Hospital, Partners Neurology, Boston.
Disclosure: The authors report no conflicts of interest.

for common challenges that senior residents may face. After our first exercise, in which we simulated a busy inpatient service recently joined by a timid medical student, there was a spontaneous, engaging discussion among the residents regarding their own similar experiences. We transitioned into our next exercise, in which we asked each participant to describe his or her best teacher. We compiled a list of their anecdotes, provoking a group discussion about common and uncommon qualities essential to the good teacher. One resident shared what he had learned from his senior resident, who spent 10 minutes at the beginning of every day showing his juniors an image adapted from the inservice training examination. Another resident spoke of an attending who demonstrated examination findings while caring for a patient who suddenly had a tonic-clonic seizure. He made the point that the best teachers seem to teach not only when it is convenient but even when it is "inconvenient." After the patient was settled, the attending stepped aside to discuss the management of status epilepticus. As a group, residents seemed to value efficiency in their instructors. Often in their experience, residents felt that extended rounds had taken away from scheduled didactic conferences. A recurring theme seemed to be that those mentors who were best were the ones who were deliberate and methodical with their instruction.

A full 100% of survey respondents reported that they learned tangible teaching tools they could take back to the clinics and wards. We demonstrated didactic and case-specific methods for teaching the neurologic examination, identified the need for covering the basics of neuroimaging early during a medical student rotation, and shared ways in which team leaders could ask junior residents to "localize the lesion" even when the diagnosis was already elucidated, as it often is. Additionally, all reported that the session helped them think about how effective they were as teachers, and 68% were interested in further sessions devoted to instruction on teaching. Because of the positive response, our program plans to continue a dedicated session on teaching this coming year which will build on the first retreat by continuing group simulations and encouraging sharing of teaching experiences. Many of the teaching resources are also being migrated to a program Web site, where they can be easily accessed by team leaders in a busy inpatient ward environment. We are also developing noon conferences on this broad topic, including sessions such as teaching junior residents how to lead an end of life discussion and the ethical basis for decision making in the intensive care unit and outpatient clinics.

The benefits of acquiring the skills are manifold. As anyone who engages in formal teaching knows, the act of teaching is a powerful way to improve our knowledge and skills. Grading medical students is another example of a difficult and occasionally woefully subjective task. However, attending preceptors who have been shown models of precepting have reported greater self-confidence in rating students and can perform the task with greater efficiency.[4] Observations regarding teaching behaviors in internal medicine residents have been reported and used as a model for developing a course on clinical teaching.[5] Medical school and residency curricula have undergone a transformation over several years in teaching professionalism, ethics, and cultural competency.[3] We believe a fourth pillar deserves to be added to this curriculum, namely, formal instruction in "how to teach."

Limitations to our survey include its binary question type, small sample size, and closed format. We plan to expand future surveys to include detailed, open-ended questions. Further studies are needed to survey and develop models of clinical teaching and to assess their impact on trainees' attitudes and fund of knowledge. In fact, the Institute of Medicine has called for increased attention to medical education research.[6] However, funding in this field is still limited and largely shouldered by academic medical centers.[7] Professional societies and the federal government should do more to sponsor research in teaching and draw more attention to the issue of teaching and learning in medicine. We can look forward to reaping the rewards of these efforts to become better teachers, colleagues, and physicians. By doing so, we honor the ancestry of our chosen professional title, doctor, derived from the Latin "docere": literally, "to teach."

ACKNOWLEDGMENT

The authors thank their department chairs, Drs. Martin Samuels and Anne Young, and residency program directors, Drs. David Greer and Steve Feske, for their support of the retreat and education curriculum.

REFERENCES

1. Fisher CM. Memoirs of a Neurologist. Rutland: Academy Books; 1992.
2. Neber JO, Gordon KC, Meyer B, Stevens N. A five-step "microskills" model of clinical teaching. J Am Board Fam Pract 1992;5:419–424.
3. Irby DM. What clinical teachers in medicine need to know. Med Teach 2006;28:618–624.

4. Aagaard E, Teherani A, Irby DM. Effectiveness of the one minute preceptor model for diagnosing the patient and the learner: proof of concept. Acad Med 2004;79: 42–49.
5. Wilkerson L, Lesky L, Medio FJ. The resident as teacher during work rounds. J Med Educ 1986;10:823–829.
6. Institute of Medicine. *Academic Health Centers: Leading Change in the 21st Century*. Washington, DC: National Academies Press; 2003.
7. Reed DA, Kern DE, Levine RB, Wright SM. Costs and funding for published medical education research. JAMA 2005;294:1052–1057.

Education Research: A program perspective on learning how to teach

Kevin N. Sheth, Timothy W. Yu, Keith A. Vossel, et al.

Neurology 2008;70;e75-e77
DOI 10.1212/01.wnl.0000311392.08059.a0