COMMENTARY

Role Models and the Learning Environment: Essential Elements in Effective Medical Education

The essential elements of effective medical education—planned and organized teaching, structured experiences, role models, and the learning environment—are interdependent and complementary.[1] However, of these four elements, role models and the learning environment have received much less formal attention from institutional and educational leaders and faculty.

Medical education as a form of adult socialization is generally characterized by the strong motivation of students to acquire the knowledge and skills of the professional role. In the process, students receive a great variety of messages delivered by many agents, both inside and outside the medical school, with little coherence or congruence among them. Students pick and choose traits from various models, internalizing an amalgam of values. As students advance in their studies and gain more experience, they increasingly develop their own criteria for judging the appropriateness of different values and behaviors.[2] Physician–teachers, the formal transmitters of clinical skills and knowledge, are also the dominant models of the norms and values of the profession. Whether the role modeling is conscious or unconscious (and it is perhaps more the latter than the former), it certainly takes place and can profoundly affect student learning.

A learning environment exists wherever and whenever students gather, from the amphitheater to conversation over a late-night coffee. The learning environment embraces numerous factors that contribute to effective education and is the background in which the curriculum resides. To be most effective, learning must be undertaken in an environment that emphasizes a spirit of enquiry, is supportive and understanding of student needs and aspirations, and is characterized by civility and sensitivity to cultural, ethnic, and gender issues as they relate to students, teachers, colleagues, and, in the clinical setting, patients and their families.

Role models and the learning environment are critical to effective education and must be thoughtfully and thoroughly considered by all teaching faculty. Institutions, organizations, faculty, and students can do much to advance the impact of role modeling and enhance the learning environment.

ROLE MODELS

> Example is not the main thing in influencing others, it is the only thing.
> —ALBERT SCHWEITZER

In a national survey of medical school deans on students' development of high professional standards, 82% ranked role modeling* of faculty and residents as the greatest influence.[3] Hafferty and Franks observed that deans expect a great deal from largely unobserved, unmonitored, and highly idiosyncratic interactions.[4] Clearly, role modeling in medical education deserves careful thought and attention.

Wright et al. noted that 90% of students identified one or more physician role models during medical school; for 35% at least one of these role models was a resident. Role models, once identified, were perceived as such for the remainder of medical school by half of the students; the other half changed their primary role models at least once. The vast majority (89%) of students identified their role models during the third and fourth (clinical) years of medical school. On average, each student listed three to seven physicians.[5]

Improving Role Modeling

- Institutions may have difficulty penalizing bad faculty behavior, and some faculty perceive that bad behavior is often rewarded while good behavior may negatively influence career advancement. Faculty may not provide effective peer evaluation, even to colleagues in considerable need of feedback and support, thus failing themselves to model a worthwhile behavior. We encourage students to engage in peer evaluation, presumably in preparation for an important responsibility of practice. Both students and faculty need guidance and support in developing facility and comfort with peer evaluation.
- Faculty are recruited primarily for academic and research achievements and potential along with clinical expertise. Recruitment and selection should also focus on the candidate's

*A distinction needs to be made between mentors and role models. The former are generally arranged with the implicit or explicit agreement of both parties, extend over time, and are limited to a few individuals. In contrast, role models may be unaware that they are serving as such to one, a few, or many individuals, the duration of exposure is highly variable, and no informal or formal relationship necessarily exists. Clearly there is a need for both mentors and role models in medical schools.

attitudes and behavior as a role model by explicitly asking for comments in references and interviews.

- Student evaluations of faculty could include assessment of professional characteristics, possibly using the attributes described by the Medical School Objectives Project (MSOP)[6] as a guide. Schools should consider appropriate faculty recognition for teachers who best reflect desirable professional behaviors (e.g. altruism, dutifulness).
- Students can assist their medical schools, as individuals and through their student organizations, in fostering positive role models and a more supportive learning environment. Students need to recognize that they themselves serve as role models—to fellow medical students, to other students, to other health professionals and staff, and to faculty. Schools should encourage students to comment on role models and their attributes.
- Students may need assistance in identifying good (and bad) models and how they see successful physicians and scientists. Possibly a review of the literature and other schools' experiences would assist students in developing a survey or structured group interviews to facilitate their discussion.
- Faculty development activities, including discussions about what good role models are and how to model appropriate attributes, should be central to the school's efforts. Videotapes, role playing, case studies, students' experiences, and focus groups may prove useful. Teachers should consider whether or not they consistently model appropriate attributes; talk about values and virtues and require students to behave in ways consistent with those values; model appropriate behavior in criticizing colleagues; and recognize their own shortfalls.

The Learning Environment

Much of what is taught during medical school—and most of what is learned—lies outside the formal curriculum. Hafferty described three components of the educational milieu: (1) the stated, intended, and formally offered and endorsed curriculum; (2) an unscripted, predominantly ad hoc and highly interpersonal form of teaching and learning that takes place among or between faculty and students (the informal curriculum); and (3) a set of influences that function at the level or organizational structure and culture (the hidden curriculum). These components illustrate the fundamental distinction between what students are taught and what they learn.[7] The vast majority of important informal interactions are student conversations where no faculty are present. A shared experience in the formal curriculum can become the raw material for even more significant discussions.[8]

Many of the values learned via the hidden curriculum are accompanied by norms that warn students against becoming too introspective in critically examining the focus and processes that are shaping their professional identities.[9] Comments by senior students and recent graduates about clinical experiences are especially telling: "I became increasingly unsure of when I could express my true compassion, when I would have to manufacture concern, when I was expected to offer psychological support, and when I would be ridiculed for being too caring. Only in retrospect do I realize how I, like so many eager medical students under constant surveillance, had shuffled through medical school from one rotation to the next, feeling like an emotional chameleon."[10] And, "All our energy was devoted to mastering the vast body of medical knowledge. We rarely took time to reflect on what we were doing. There was no place for vulnerability, exposure, uncertainty, or the admission of incomplete knowledge. We were never able to expose our frustration with a system that does not always succeed in listening to the suffering of patients. As I spoke with fellow students, I found that they shared my sense of isolation in their struggle to interpret the experience of clinical medicine."[11]

Improving the Learning Environment

- Institutional leaders need to ask whether or not their institution acts altruistically and embodies the virtues and values (e.g., compassion, honesty and integrity, commitment to the common good, awareness of limitations) one would expect of individuals. The learning environment, including the behaviors of individual faculty members, and the institution's corporate policies and activities clearly affect students' and residents' views of the importance of the values and principles of medicine. Potential or real discrepancies between what is espoused by faculty and institutions (including codes of conduct and oaths) and the reality of contemporary medicine must be addressed. An oversight committee to review and assess learning-environment issues could be included within the medical center as well.
- Schools might develop both student and faculty surveys to assess the quality of the learning environment. For example, students and faculty could be asked about their perceptions of the helpfulness of classmates; encouragement of teamwork; faculty helpfulness to students (especially those experiencing academic or personal problems); openness to constructive criticism about the educational program, including the appropriateness and fairness of evaluation methods; the adequacy of supervision; and the use of constructive feedback in formative evaluation. Both individual schools and the Association of American Medical Colleges should consider including specific questions about altruism, dutifulness, role models, and the learning environment in student graduation questionnaires.
- Medical student bodies often develop

codes of conduct for themselves. Students and faculty might similarly develop an institutional code. Could we link the student White Coat Ceremony, held in many medical schools, with a statement of institutional policies and behaviors (the institution's "white coat") to be affirmed by faculty during the ceremony?

Ongoing Challenges

In the process of improving role modeling and the learning environments at our medical schools, we must visit and revisit some fundamental questions:

- What role models are we looking for?
- What can schools do individually and collectively to encourage and support studies of the effects of positive and negative role models on students' acquisition of professional values?
- What can schools do to help faculty and residents increase awareness of their strengths and weaknesses as role models?
- What strategies can schools implement to assist those identified as poor role models?
- How can schools best recognize positive faculty roles?
- How do schools deal effectively with faculty members who consistently and persistently exhibit poor attitudes/behaviors?
- How will schools consider institutional behaviors and policies to better demonstrate and reinforce the attributes we want students to acquire?
- How will schools individually and collectively address the need for methods and a blueprint to assess professional attitudes and behaviors in order to know whether or not learning objectives are being achieved?
- How do we measure the impacts of interventions to improve the learning environment?
- How can schools best harness the energy, commitment, and power of their students to influence the necessary changes in the learning environment?
- How can institutional leaders (the deanery and departmental chairs) be chosen with a view to the attributes we wish to impart and reinforce?

Deans and faculty must think seriously about role models and the learning environment and act accordingly to create the most supportive and exemplary educational milieu possible. This process will not be easy and often it will not be pleasant; however, we must begin if we are to make substantial headway in reshaping medical education to better serve the needs of both our stu dents and society.

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