

## Mentoring and the Art of Medicine

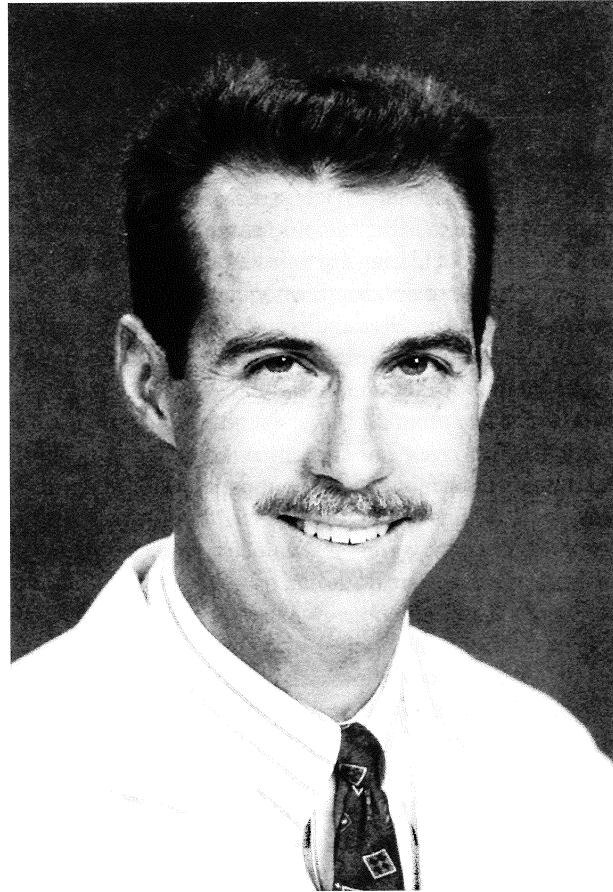
James B. Benjamin, MD

As physicians, we have all taken the Hippocratic oath, or some variation, in which we pledge to "...honor him who has taught me this art. . . I will hold his sons as my brothers and shall teach them this art if they should wish to learn it. . . ." In the most literal sense, many of us are involved with the formal education of fellows, residents, and medical students. Even outside this setting, we, as part of the practice of medicine, educate our patients about the cause, aggravating factors, and treatment of illness. Legally we are bound, in the setting of informed consent, to educate our patients regarding the possible expected benefits and complications of their treatment.<sup>1</sup>

In the management of trauma, we often find too little time for education. The patient is very often in a condition that precludes any type of meaningful communication, and the situation is dire, requiring rapid decision-making and action with little time to discuss the options with our students. We are acutely aware, however, that the practice of medicine, even in this setting, involves much more than the application of scientific knowledge and technical skills to the disease process of another.

As practitioners of allopathic medicine, we berate alternative medicine and humanistic specialists and chide these approaches as "unproven and unscientific," but, in reality, isn't the public's willingness to embrace these forms of health care telling us what they value in their interaction with a physician? Too often we forget that patients visit doctors for reasons other than to be dazzled by the technical expertise of the physician. I would like to stress that the scientific foundations of the practice of medicine will continue to be the cornerstone of our craft. It is how we apply the science that constitutes the "art of medicine." It is knowing when to talk, when to listen, what questions to ask, what answers are important, what test to order and not order, and when to step back and ask for help that separates professionals from algorithm-bound technicians. It is how we teach this art to our students that defines us as mentors.

Our role as physicians and teachers places us in a unique position to influence the lives of others, hopefully in a positive way. I would like to address our role as teachers and mentors to future generations. Mentor, a figure in Greek mythology, was a trusted friend of Odysseus who assumed



James B. Benjamin, MD  
President, Western Trauma Association

the responsibility of raising Odysseus' son, Telemachus, and running the household during his absence. He was a person looked upon for sound advice and guidance. Although Mentor was a teacher, the term implies much more and, in most cases, it involves the elements of both teaching and serving as a role model.

As teachers, there are several basic issues that need to be clarified before we can successfully serve as mentors to our students. To serve as a good role model, the first and rather critical issue is: What is the definition of a good doctor? Although we know who is a good doctor and who isn't (one definition being someone we would trust with our own care), defining the characteristics of a good doctor can be very nebulous. Certainly, historical descriptions do little to help us with this task.

Sasruta, a Hindu physician who lived sometime between 800 BC and 400 AD, gave the following description of an ideal physician: "He shall belong to one of the three highest castes and be of good family. He shall be inquisitive, strong, ener-

From the Section of Orthopedic Surgery, University of Arizona, Health Sciences Center, Tucson, Arizona.  
Presidential Address at the 28th Annual Meeting of the Western Trauma Association, February 22-28, 1998, Lake Louise, Alberta, Canada.  
Address for reprints: James B. Benjamin, MD, Orthopedic Surgery, P.O. Box 245064, Tucson, AZ 85724-5064.

getic, self-controlled and of good character, with intelligence and a good memory, courage and spiritual purity. He shall have thin lips, teeth, and tongue, a straight nose, honest and clever eyes and a friendly mouth. . . . A man with the opposite qualities must not be admitted to the holy realm of medicine."

Aulus Cornelius Celsus, a Roman author who documented various sciences and practices of his time (approximately 30 AD), felt that the ideal surgeon ". . . ought to be in early manhood or, at any rate, not much older; have sharp and clear eyesight; appear undistressed and compassionate inasmuch as he wishes to heal those whom he treats, but does not allow their cries to hurry him more than the circumstances require, or to cut less than is necessary, and permits the patient's groaning to make not the slightest impression on him in anything he does."

A bit more pragmatic advice was offered by Heinrich von Pfoltspeundt, an experienced battle surgeon, who wrote in the 15th century about caring for injuries: "The surgeon should make sure that he is not drunk when treating his patients. For otherwise he may neglect them and will be guilty and punished by God. If he has eaten onions or beans, or spent the previous night with an impure lady, he should be careful not to breathe on any wounds. . . . A wound should be bound with clean white bandages else there may be harmful effects. He should wash his hands before treating anyone."

My personal favorite is the concise description offered by Theodor Kocher: "A surgeon is a doctor who can operate and who knows when not to."

Although there are some elements of truth in all of these passages, we are probably less influenced by literary descriptions than we are by our personal experiences with our own teachers. Unfortunately, many notable figures in medicine had mercurial personalities, and their disciples revel in the stories of bizarre, often dysfunctional behavior exhibited by these individuals. This compendium of activity constitutes the folklore of medicine, and although their telling provides an interesting interlude at 3 AM while caring for the intoxicated motorcycle stunt driver, I do not feel that any of us would want to be the aloof, abrupt, arrogant, rude, hollering, boozing, intern-throttling, instrument-throwing, nurse/medical student-pandering, profanity-spewing workaholic that is often the subject of these stories.

The first critical aspect of mentoring involves the sometimes intangible concept of modeling an approach to life that we feel is worthwhile. This is the art of life, and determines to a significant degree if we view the glass as half empty or half full. As with children, we must remember to never underestimate the little things. Young baseball players may remember none of the batting dynamics and stance and swing mechanics that we work tirelessly to teach, but they certainly remember, and model flawlessly, the essential spitting techniques and crotch grabbing that has nothing whatsoever to do with hitting the ball.

The second central issue in successful mentoring is possessing the ability to teach. It is interesting that individuals who are entrusted with this task often have little or no formal training in how to teach. We can all recall both effective and ineffective teachers we have encountered, although we may not be able to

identify the differences in their methods.<sup>2</sup> Certainly worse than ineffective instructional methods are dysfunctional ones. Unfortunately, many of us who are subjected to dysfunctional teaching methods learn our lessons too well; the abused learner unconsciously becomes an abusing teacher.

In medicine, we encounter many different types of teaching styles, most of which are familiar to us. These include the "master craftsman," "Socrates," "the pimp," and "the coach."

The master craftsman has a reputation for excellence and skill and teaches by doing and showing. He admonishes his students to "pay close attention to how it is done." The apprentice in this setting assists, and the master, in turn, observes the apprentice. The focus with this style of teaching is the craft and its product.

The Socratic teacher engages the learner with questions. The learner, in turn, articulates his own ideas, and the ensuing discourse results in feedback. In this setting, the learner contributes significantly to the teaching content and process. This style of teaching is obviously very time-intensive.

The pimp possesses a sharp, biting personality, and with this tool probes the weaknesses of the student. By keeping the student off-balance, he controls by fear. There is a chance to star, for the teacher, certainly, and occasionally for the student. The interactions for the student are win-lose, and the learner remembers the method more than the content.

The coach brings knowledge and experience to the playing field. He sets the tone and pace of the game. The coach encourages and motivates his players. The focus is on developing personal team strengths to "win."<sup>3</sup>

The teacher's role in medical education should probably be more like that of the coach, the music teacher, or the director of a play. In those endeavors, the teacher is judged by the success of the pupil. He or she spends time observing the student (not showing how well he might be able to perform the same task), diagnosing strengths and weaknesses, analyzing the student's performance, and designing therapeutic exercises to improve that performance. In these settings, the teacher's job is observation, evaluation, and feedback. This technique is intensely student-centered and is hard work.<sup>4</sup>

It is important to recognize that, as teachers, we cannot simply pour our knowledge into others who sit before us with their minds idling. The student must be the primary source of energy in the educational exchange. Most of us spend too much time showing off our intellectual skills rather than watching the students practice theirs—the "let me give my answer" game.<sup>4</sup> We teach this way largely because it is the way we were taught, not because it is good or effective. The teaching-learning interchange must come as a result of the didactic skills of the teacher but be driven by the actively growing mind of the learner.<sup>5</sup> The adult learner must be motivated to learn. As teachers, we often complain about the listless attitude of students, but we need to ask ourselves: Is it our inability to properly motivate them that is the problem?

Admittedly, a big component of medical education revolves around affective traits such as ethics and behavior. These are personal traits that are irreversibly formulated at a very early age. Adults with affective problems will usually behave well when closely scrutinized by authority figures but

will  
once  
adult  
behav  
tion  
eval  
auth  
clini  
"nau  
Co  
knov  
elim  
sitivi  
these  
it ma  
alter  
raise  
sensi  
ruler  
who  
tion  
ment  
sugg  
ics w  
objec  
certa  
moti  
requ  
W  
taugh  
is im  
docto  
dent  
U  
and l  
befo  
beha  
and  
sors  
educ  
oper  
in th  
Profi  
gene  
Seco  
a yo  
Profi  
than  
tion  
an ac  
been  
A  
guid  
sibil  
pens  
phys  
edgi  
adeq

will usually revert to their lifelong dysfunctional patterns on their own. Although we can learn how to teach adults, it is often difficult, if not impossible, to change adult behavior. Nonetheless, an important part of medical education is evaluating a student's behavior, and as part of this evaluation, we should not forget to include input from less authoritative observers. Operating room personnel, ward and clinic nurses, and even the page operators know who's "naughty and nice."<sup>2</sup>

Competence in medicine depends on many factors: skill, knowledge, and attitude. As teachers, we need to emphasize eliminating attitudes that discourage learning, such as insensitivity, arrogance, and sexism. Is it possible for us to alter these attitudes in adults? The answer may be no, but although it may not be possible to alter adult attitudes, it is possible to alter adult behavior. The discussion of ethics and behavior raises another critical issue: as teachers, are we becoming too sensitive to encourage greatness in our students? Historically, rulers have had to change. They can no longer behead wives who don't produce male offspring or hang voices of opposition (at least not in countries with CNN). I believe that mentors and educators need to change as well. I am not suggesting that we either become, or aspire to train, empathics who become emotionally crippled by the patients. Clinical objectivity is vitally important. Yet, although there are most certainly times when an iron fist is in order, learning how to motivate without the use of fear or intimidation is an absolute requirement of being a good teacher.

We cannot forget that good doctors are not born—they are taught. They are taught the science and the art of medicine. It is incumbent upon us to have a clear picture of what a good doctor should be, as well as learning how to teach our students to be that doctor.

Unfortunately, there are many obstacles to filling this role, and being a good doctor or mentor is no small task. There lie before us many barriers, not the least of which is our own behavior. The time that "professors" spend directly teaching and supervising residents is under constant restraint. Professors now play a different role in the financing of medical education. In 1970, less than 6.7% of medical school general operating revenue came from the income generated by faculty in their clinical practices; in 1991, the figure was 32%.<sup>6</sup> Professors now have to spend more time seeing patients to generate the professional fees used to run medical schools. Second, supervision and teaching have little practical value to a young professor in his or her bid for academic success. Professors are valued more for their financial productivity than for their educational productivity. Although the traditional lip service is paid to teaching, teaching can often hurt an academic career and rarely helps. "Publish or perish" has been replaced by "pay up or ship out."<sup>7</sup>

Additionally, new Health Care Financing Administration guidelines all but abolish the concept of progressive responsibility and independence in medical education. From a compensation standpoint, the attending physician must always be physically present. Co-signing the resident's note acknowledging agreement with the assessment and plan is no longer adequate; we must now rewrite the note ourselves. The va-

lidity of residents even dictating operative reports or clinic visits is being questioned. Medical students now are not even recognized as members of the same species—falling somewhere between single-cell organisms and quadrupeds. The government does not want students or residents to have any interaction with patients or the medical system unless they are in the physical presence of an attending physician, but it certainly wants these same students to be fully competent to fill this role on the first of July. Despite these obstacles, I believe that everyone involved in medical education, without exception, feels strongly that teaching is an important and valued part of their professional lives.

Much to my surprise, I have discovered (through the unlikely avenue of actually reading about the subject) that the principles of good teaching are very much a science. A central principle in teaching is that adult education differs significantly from teaching children. Preadult learning is classroom-oriented and teacher-focused. The relevance of the presented material is unnecessary or deferred, and the reward to learn is external and artificial. Motivation in preadult learning is based on the principle that "This is important information. There will be a test Friday."<sup>2</sup>

Successful adult learning is based on three basic assumptions. The first is that information must come in response to the learner's perception of a need for the information. The learner must believe that the information is important. Adult learning is the process of remembering what interests us and, in the ideal setting, only material of immediate relevance to the learner is offered. As a first step, we should present information that is of value to our students and, if necessary, be ready to defend why it is important to know.

The second tenet of adult education is that the personal involvement of the student in the learning task is necessary. In medicine, this is probably the easiest part of teaching in that we have limitless opportunities to practice medical skills, such as taking the history, listening to the murmur, examining the knee, and suturing the wound. The primary purpose of the education process is to transfer to the learner the responsibility for his or her own learning. How we involve the student in the learning process is critical: "You idiot, weren't you watching when I did it?" is not a productive method of student integration into their own educational process. Alternatively, medical educators should try to engender near-peer encounters. Where the difference in age and experience of the learner and teacher is small, the learning environment tends to be nonthreatening and nonjudgmental. Additionally, an effective teacher must be both useful and stimulating.

The third tenet of adult learning is that the learner must perceive that what they are learning is closing the cognitive gap. The satisfactions of success are always more educationally useful than the frustrations of failure. Our role as teachers/mentors requires us to evaluate and critique our students' performance, hopefully in an objective, noncritical manner. The type of feedback we give and the way in which we give it is a critical part of the educational process. To this end, we should link our feedback to learners' goals and, when giving feedback, focus on the behavior, not on the individual. For a change, we should catch our students doing something right

and give positive feedback to reward success. This is always more effective than negative feedback. We should present feedback in nonjudgmental language, being as specific as possible, and present feedback in ways that will be regarded as constructive and helpful.<sup>4,8</sup>

Because of differences in personality, effective teachers will have diverse techniques for reaching students, and all students will not be equally affected by any one teacher. In adult learning, we need to remind ourselves that the focus is on the learner, not the teacher. The teacher's role is mainly one of setting up an appropriately stressful, close-to-real-life environment and offering near-peer problem-solving opportunities.<sup>2</sup> Is this pampering and coddling? I don't think so. There should be constant creative tension, under the teacher's guidance, to shift the responsibility of education to the learner. Once this has been achieved, the teacher observes, critiques, and fades away. In this setting, the student, with perhaps only vague awareness of the teacher's role in this success, achieves subject mastery along with responsibility for lifelong renewal. There are always a few with the instinctive skills prerequisite to being a master teacher, but master teachers are probably born learners who have come to understand what is required to fuel the minds of others. More likely, the master teacher is analogous to the great lecturer or speaker—someone who spends a lot of time preparing and practicing their "spontaneous" speech.<sup>5</sup>

I would now like to turn to one of our central challenges, that of defining the characteristics of a good doctor or mentor. I would like to suggest that, as mentors, we demonstrate respect for patients and role-model good interactions with operating room and hospital staff. This requires that we are confident in our role as physician and teacher. We should answer questions clearly, remain calm and courteous, and teach with enthusiasm. We should explain the rationale for our actions and decisions and provide feedback to our students without belittling them.

How do we accomplish all of these things? It is often difficult, if not overwhelming, when we are faced with a list of expectations that may not fit our own list of behavior patterns. As with any complicated task (remove the spleen, replace the hip, build the bridge, hit the home run, raise your children), it is easier to break complex tasks into simple steps that we can do. Introduce yourself to students and know their names. Be available and approachable. Clarify your expectations and goals. Respond constructively to problems, questions, and feedback. Don't react or overreact. Demonstrate enthusiasm and energy toward teaching, your topic, and students. Reward success.

When we question our students, we should learn how to ask questions based on what we want to measure: recall, analysis, comparison, inference, or evaluation. We should avoid questions with yes or no answers. We need to remember to wait for a response. Too often we are in such a hurry that we don't want to wait for our students to think. Ask follow-up questions: "Can you explain further?" "Why did you think that?" "Is there another way of looking at it?" Ask one student to paraphrase what another has said.<sup>3</sup>

I would be sorely remiss if I didn't recognize some mentors that I have been fortunate to know.

Dr. Leonard Peltier was my chief who taught me the importance of surgical planning and operative principles. He taught me not to second-guess myself. His often repeated phrase, "The enemy of good is better," reinforced to me that things are rarely perfect and, at times, the dogmatic pursuit of perfection during a difficult case can be the breeding ground for a surgical disaster.

Eric Gall, an internist who *tried* to teach me the art and science of physical diagnosis, compassion, and the importance of a sense of humor.

Mike Pitt, a radiologist and, undoubtedly, the best "pure" teacher I have been fortunate enough to know. His patience and ability to steer the clueless, myself included, to the correct answer are skills that continually amaze me.

Robin Ling is the most intellectually honest man I have met. His quiet persistence in the face of often hostile professional criticism was an example of adhering to your principles rather than going with popular sentiment. He continues to be both a professional and personal inspiration.

Bob Volz taught me the art of my surgical practice in both the operating room and the clinic. He paved the road for my career and, more than anyone, served as my mentor in orthopedics. Bob, one of the founding fathers and the first president of the Western Trauma Association, also introduced me to this group when I was a resident, something for which I will always be grateful.

Teaching a balance and separation between our personal and professional lives is an important lesson that often is forgotten in the urgency of our professional duties. Nowhere does this balance coexist better than in the Western Trauma Association. Hopefully, we are not defined solely by our professional endeavors. It is our relationships with family and friends—our personal associations and activities—that make our lives complete. The friendships and professional relationships that I have developed as a result of my relationship with the Western Trauma Association will always be valued.

Mentoring is teaching and providing the opportunity to learn, but it should involve more. It should involve the motivation to excel. We are fortunate in that our jobs involve working with good people using the latest technology in advanced centers. We must never forget, however, that nothing can take the place of direct personal experience with the patient in the clinical setting. How the student interprets that experience can be largely influenced by their mentor.

Billroth said, "A person may have learned a good deal and still be a bad doctor who earns no trust from patients. The way to deal with patients is to win their confidence, listen to them (patients are more eager to talk than to listen), and help them, console them, get them to understand serious matters: none of this can be read in books. A student can learn it only through intimate contact with his teacher, whom he will unconsciously imitate. . . . The patient longs for the doctor's visit; his thoughts and feelings circle around this event. The doctor may do whatever is necessary with speed and precision but he should never give the impression of being in a hurry, or of having other things on his mind."

Good  
ifying t

REFER

1. Gc  
19
2. Mc  
Un
3. Al  
Ad  
No

The  
of \$  
you  
FellThe  
• de  
• ac  
• let  
• let  
• cuFou  
Inte  
Ave

Good teaching is hard work, but it is infinitely more gratifying than bad teaching.

#### REFERENCES

1. Gould JS. Responsibilities of the teaching pro. *Am J Orthop.* 1997;26:662.
2. Meals RA. Surgical teaching vs surgical learning. *Loyola University Orthopedic Journal.* 1993;II:35-38.
3. Allen G, Mack G. Teaching techniques. Presented at the Adult Education Symposium, Academic Orthopedic Society; November 8, 1996; San Francisco, Calif.
4. King TC. Teaching surgeons to teach. *ACS Bulletin.* November 1987;5-10.
5. King RB. Teaching surgeons to teach. *ACS Bulletin.* April 1987;14-17.
6. Krakower JY, Jolly P, Beran R. US medical school finances. *JAMA.* 1993;270:1085-1091.
7. Gamble JG. The relevance of John Dewey's philosophy to graduate medical education. *Pharos.* Spring 1994; 16-19.
8. Irby D, DeMers J, Scher M, Matthews D. A model for the improvement of medical faculty lecturing. *J Med Ed.* 1976; 51:403-409.

### Surgical Dynamics Traveling Fellowship Award

The International Society for the Study of the Lumbar Spine has received an educational grant for a Traveling Fellowship of \$5,000 from Surgical Dynamics. Competition is open to investigators who are, in the year of application, age 35 or younger. Applicants should have an expressed and documented research interest in lumbar spine problems. The Traveling Fellowship can be used as a stipend for research at other institutions. **Application deadline is March 1, 1999.**

The application should include:

- description of proposed research project
- acceptance letter from host institution where research will be performed
- letter of recommendation from a member of ISSLS (if applicant is nonmember)
- letter of recommendation from Department Chairman or Head of a Laboratory
- curriculum vitae of applicant, including list of publications and presentations

Four copies of each application should be submitted to:

International Society for the Study of the Lumbar Spine, Sunnybrook Health Science Center, Room A401, 2075 Bayview Avenue, Toronto, Canada M4N 3M5. Phone 416/480-4833; fax: 416/480-6055; e-mail: ISSLS@aol.com.