

The Art of Mentoring

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While the golden era of mentoring may have been the age of apprenticeships in medicine, the birth of the clinical clerkship in the late 1800s provided the structure for the relationship between faculty and medical student. The last few decades, however, have seen a dramatic change in the availability of faculty to mentor students in clinical teaching settings despite a 600% increase in the number of clinical full-time medical school faculty. This work explores some of the reasons for this deterioration in mentoring and looks at the role of the mentor in professional development, specifically in the area of medical education. Recommendations for implementing structured mentoring programs within a department of surgery are provided. The article concludes with discussion of individual characteristics of the effective mentor in surgical education. *Am J Surg.* 1996;171:604-607.

One of my greatest pleasures in life is serving as family story teller in the evening before the children go to bed. I have read some wonderful stories over the last several years but just as they have their favorites, I have mine. I would like to tell you a story about the rainbow fish, a story by Marcus Pfister, with slight adaptations.¹ A long way out in the deep blue sea there lived a fish. Not just an ordinary fish, but the most beautiful fish in the entire school of fish. His scales were every shade of sparkling blue and green and purple. Student fishes and the fishes in training were amazed at his beauty. They hoped so much that he would share with them some of the beauty of his wisdom but the rainbow fish would just glide past, proud and silent, letting his scales shimmer. One day a little blue fish followed after him. "Rainbow fish," he called, "wait for me. I think I want to be like you some day. Please give me one of your shiny scales, they are so wonderful and you have so many." "You want me to give you one of my special scales? Who do you think you are?" cried the rainbow fish. "Get away from me." The little blue fish swam away shocked and so upset he told all the other little fish in the school what had happened. From then on, no one would have anything to do with the rainbow fish. What good were the dazzling shimmering scales with no one to admire them, thought the rainbow fish. Now he was the loneliest fish in the entire

ocean. One day he poured out his troubles to the starfish. "I really am beautiful, why doesn't anybody like me?" "I can't answer that for you," said the starfish, "but if you go beyond the coral reef to a deep cave you will find the wise octopus, she can help you." He found the octopus waiting for him in the cave. "The waves have told me your story," said the octopus with a deep voice, "this is my advice. Give a glittering scale to each of the other fish. You will no longer be the most beautiful fish in the sea but you will discover how to be happy." "I can't," the rainbow fish started to say, but the octopus had already disappeared into a cloud of ink. Suddenly he felt the light touch of a fin. The little blue fish was back. "Rainbow fish, please don't be angry. I just want one little scale." The rainbow fish wavered. Only one small shimmery scale he thought, well maybe I wouldn't miss just one. Carefully the rainbow fish pulled out the smallest scale and gave it to the little fish. A rather peculiar feeling came over the rainbow fish. For a long time he watched the little blue fish swim back and forth with his new scale trying to be like the rainbow fish glittering in the water. The little blue fish whizzed through the ocean with his scale flashing so it didn't take long before the rainbow fish was surrounded by other fish. The rainbow fish shared his scales left and right and the more he gave away the more delighted he became. Even though some of the more senior fish in the school advised him that it was unwise to give so much of himself to the small fish, he continued to give away his scales until he had only one shining scale left. His most prized possessions had been given away, yet he was very happy.

I recently sat in a faculty executive committee meeting during the never-ending discussions of budget crisis and listened with great interest as a faculty member asked the Dean the question "Who is the most important consumer for our School of Medicine?." I believe the Dean's answer was the correct one, "Our number one consumer," he said, "is the medical student." I believe this view reflects an emerging reality that two of the three key missions of a medical school can be accomplished outside of a school of medicine. In an era of HMOs and managed care, it is becoming clear that patient care can be provided without a medical school. It is becoming increasingly apparent that even medical research can be done by industry. The profound truth remains however that only a medical school can train medical students. As this truth has emerged in my own mind, I have become increasingly troubled over the last few years by what I perceive as an abandonment of the most central elemental role of educators in general and surgical educators specifically. This role is beyond curriculum development efforts, beyond lecturing, beyond performance evaluation. I would like to frame this critical issue in the form of a question: Where have all the mentors gone?

As we look back on the history of mentoring in medical education, the golden era may well have been the age of

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apprenticeships with the ultimate manifestation of the mentor and mentee relationship played out in day to day professional activity. In the late 1800s, there emerged what has become labeled as proprietary medical schools. During this era, poorly prepared students were accepted in larger and larger numbers to make medical education a profitable venture. Student education included predominantly lecture series with almost no clinical exposure and no significant contact with faculty. This era ended however with the now famous Flexner Report, which was a scathing review of medical education and a call for a new era of clinical based medical education with a close relationship between faculty and student. The clinical clerkship as we know it was born at the new Hopkins School of Medicine founded in 1893. On the wards of the Hopkins Hospital, the clerkship became the vehicle of clinical instruction in Internal Medicine, Surgery, and OB/GYN for every third and fourth year student. It was introduced by William Osler, who was probably the greatest American clinical teacher of all time. The relationship between faculty and medical student is best described by Osler in his portrayal of the professor as "a senior student anxious to help his juniors. When a simple earnest spirit animates a college, there is no appreciable interval between the teacher and the taught—both are in the same class, the one a little more advanced than the others."² In 1926, the AAMC proudly announced that ward clerkships "have been instituted in all medical schools."

But things have changed over the last few decades. This change is best reflected in data from the recent AAMC databook of 1994, which indicates that the number of matriculated medical students over the last three decades has remained fairly stable.³ However, the same cannot be said of the numbers of full-time medical school faculty in the clinical sciences. These numbers over the last three decades have increased more than 600%. One could conclude that such a dramatic change should only further enhance the mentoring of medical students, but quite the contrary has occurred. There has been a dramatic change in the availability of faculty in clinic teaching settings. This is vividly portrayed by Lewis Thomas, who was a medical student during clerkship's golden era at Hopkins and recently reviewed Melvin Connor's book on "Becoming a Medical Student," a book that describes the experience of a recent Harvard student.⁴

"The biggest difference between Connor's clerkship in 1983-84, and those of the students I remember from earlier decades, seems to be the near-absence of senior physicians. As I recall, they were nearly always at hand, in and out of the wards, making rounds at all hours, displaying for the students' benefit the complete repertoire of seasoned, highly skilled doctors. Where on earth were these people in Connor's Harvard? The professors (these days) are elsewhere, trying to allocate their time between writing out their research grants, doing or at least supervising the research in their laboratories, seeing their own patients, and worrying continually about tenure (and parking)."

There have been many through the years who have attempted to rationalize this deterioration of the relationship between a faculty member and a medical student. One of the oldest arguments has been that mentoring is not necessary if you recruit the best and the brightest. Interestingly this argument has as its father, Franklin Mall, the Chief of Anatomy at the New Hopkins Medical School. He was one of the most biting spokesmen for the inductive approach to medical education and his method was to teach by not teaching.⁵ He would assign students a part of a cadaver, provide them references, give them a microscope and leave them to work on their own. The laboratory was kept open from Monday morning until Saturday evening and although his staff would be present daily, no formal instruction was provided. He told students the human body was their textbook and they should be responsible for their learning. One of the favorite apocryphal stories students enjoyed telling of Mall was that when he was asked by his wife how to bathe their first baby he replied "just throw her in the water and let her work out her own technique." But as has always been the case in medical education, the brilliant students loved him but the average students found his methods exasperating.

Others say mentoring of medical students by faculty is no longer necessary since housestaff serve that role. This has become quite clearly the norm in undergraduate education as recently portrayed on a *60 Minutes* special which made it clear that the majority of lower level undergraduate college classes were taught by graduate assistants rather than university faculty. Recently a clerkship director explained to me why his faculty were not involved in mentoring of students as he stated that housestaff were so much closer to the students in age and experience that they made much better mentors. I cannot begin to tell you how wrong that assessment is. Charles Elliott wrote years ago "that every individual medical student must be personally instructed by a skillful person in the use of his eyes, ears, and fingers in a great variety of operations which require much knowledge and highly trained senses. It is obvious that such instruction must be very costly."⁶

Let's look more closely at the art and science of mentoring. The Iliad and the Odyssey tell the story of Odysseus leaving his home and his son Telemachus to fight in the Trojan War. His return to Ithaca was delayed for many years as he encountered numerous obstacles on his voyage such as the frightening Cyclops and the beautiful Calypso. In Odysseus' absence, a trusted friend named Mentor assumed the responsibility of "mentoring" Telemachus as he matured to manhood. From this relationship come the origins of mentoring characteristics such as a developer of talent, a teacher of skills and knowledge of the discipline, an assistant in defining goals, and one who shares social and professional values. Deloz elaborates on this definition when he states that

"Mentors are guides. They lead us along the journey of our lives. We trust them because they have been there before. They embody our hopes, cast light on the way ahead, interpret arcane signs, warn us of lurking dangers and point out unexpected delights along the way."⁷

Levinson, in his book *The Seasons of a Man's Life*,⁸ describes a model that defines mentoring as a developmental stage in the life of all professionals. Such professionals have a personal need to give back to their profession and create a legacy. Because each developmental stage along the professional life is essential, then the failure to both have a mentor and subsequently to serve as a mentor leads to psychological conflict.

There are certainly ways to enhance this mentoring activity between faculty and students during the surgical clerkship experience. At the University of Southern California we have developed a faculty mentoring program with the stated program goals of (1) providing opportunities for mentor/mentee relationships, (2) providing feedback based on direct observation, and (3) through bedside teaching, improving student skills in patient presentation, history taking, and physical exam; patient-physician interaction; development of differential diagnosis; cost-effective diagnostic workup; and critical thinking skills. The structure of the faculty mentor program places one faculty member with a group of four students throughout the entire clerkship, which allows for a continuous relationship not otherwise possible during the two 3-week ward experiences. Faculty mentors must commit to a minimum of 1.5 hours per week for structured case presentations and bedside teaching with their groups. The program goals cannot be met with teaching sessions in a faculty office or the radiology department. We are making an effort to reverse the deterioration in the art of bedside teaching captured in Neil Linfor's statement that "clinical entropy is dispersing learners from the bedside."⁹ The program includes recommendations for additional mentoring activities to be initiated by the faculty members, such as student involvement in their private clinics, allowing students to witness firsthand the art of medicine as faculty deal with vertical ambulatory patients. The role modeling of balance and priorities between public and private life often calls for meetings in nonmedical settings, over a cup of coffee, or in a faculty member's home.

Because mentoring is ultimately a relationship between a faculty member and a learner, it is important to focus on the individual characteristics of the effective mentor in surgical education. The effective mentor must be an *exemplary role model*. Such role modeling can shape professional identity. Students must see a standard of excellence to pursue, a model to copy. Effective mentors as well are *skilled in questioning*. Studies of ward and bedside teaching have shown that medical faculty ask predominantly low level questions that call for only recall of factual material. The skilled questioner focuses on higher level thinking and poses questions that call for comparison, analysis, and reasoning. John Ciardi said that "a good question is never answered. It is not a bolt to be tightened into place, but a seed to be planted and to bear more seed toward the hope of greening the landscape of ideas."¹⁰ Good questioning is the difference between giving students the information and provoking their critical thinking until they are able to come to discovery on their own. John Hildebilde described it perfectly when he said "I would rather be remembered for what others figured out in my presence how to do . . . the most important and most memorable things often do not seem to have been caused, but simply to dawn. An effective

teacher seemingly just happens to be nearby when the dawn comes."¹¹

Effective mentors *recognize students as individuals with private lives*. They have spouses and significant others and often children and mortgage payments and family emergencies. It is often easier to understand why students respond as they do, perform as they do, and interact with others as they do if you understand them as individuals, their backgrounds, their motivations, and their future goals. A mentor should *assure a supportive environment for learning*. Like the Commandments, one could argue which adult learning principle is the greatest of them all. If only one is to guide the effective mentor, I believe it should be this one. I see the need for a supportive environment, particularly in the operating room, often perceived as a foreign and alien place for the medical student on the surgery clerkship.

A mentor should observe student performance. Early in my academic career, I became perplexed by the number of students who would tell me that no faculty member had ever observed them taking a history or performing a physical examination at the patient's bedside during their clinical clerkship and senior year. We often seem content to read their histories and their reports of physical examination but seldom observe them to provide feedback. Engel has postulated what might happen if music students were taught to play their instruments the way medical students and housestaff are often taught to evaluate and examine patients.¹²

"The procedure would consist of presenting in lectures maybe in a demonstration or two the theory and mechanisms of the music-producing ability of the instrument and telling him to produce a melody. The instructor of course would not be present to observe or listen to the student's effort but would be satisfied with the student's subsequent verbal report of what came out of the instrument."

At many programs, standardized patients have dramatically enhanced clinical skills training and evaluation but they can never replace bedside observation. Effective mentors should be *comfortable with ignorance*. It is unlikely that we will ever stimulate students to develop habits of lifelong learning if we are uncomfortable with our own ignorance. They need to see us struggling with the unknown and seeking to find answers. Charles and Marlese Wittl, surgical faculty at the University of Arizona, for many years ran a course on medical ignorance that forced students and faculty to focus on all of the questions that were unanswered as opposed to only the answered questions.

Mentors should *think about student issues even when they are not with students*. Roland Folse has made the observation that we spend a great deal of time away from the medical center thinking about our research, the architecture of new facilities, and new clinical studies.¹³ The effective mentor finds opportunity to do such planning for their student interactions. The effective mentor *consistently assesses learning needs*. Failing to assess what our students need to know is like writing a prescription before we have done the history and physical examination. We assess knowledge by asking questions, we assess skills by observation, and we assess attitudes by professional intimacy.¹⁴ Without such a needs

assessment, Neil Whitman has suggested that we will teach facts that are already known, train for skills that have already been acquired, and inspire values that are already shared.¹⁴

Good mentors are *liberal with feedback*. We could learn a great deal from successful athletic coaches. The Monday after Sunday football is spent analyzing Sunday film, examining every play. Detailed feedback is then given on Tuesday and the feedback is always based on direct observation. Finally, the effective mentor *exhibits patience*. William Osler observed that "the whole art of medicine is an observation, as the old motto goes, but to educate the eye to see, the ear to hear, and the finger to feel takes time, and to make a beginning, to start a man on the right path, is all that we can do."¹⁵ When time with students is rushed and hurried, the result is never quite what we had planned.

Some have suggested that our failure to provide the mentoring needed by students is a major factor in what some have described as the darker side of the medical student experience. For example, Becker et al and Silver have described the student experience as a trial by exhaustion and humiliation, as well as a journey of harassment and abuse.^{16,17} Work by Plovnick and Wolf et al document a student's progression toward a less humanitarian and more cynical nature with stresses that often lead to depression.^{18,19} It is clear that all students need mentors: the AOA students, the average students, and the students that are struggling in some aspect of the medical school experience. Without effective mentoring, students feel alone, perplexed, overwhelmed and the fire of enthusiasm they began their medical school experience with begins to flicker. When there is a Mentor for Telemachus, however, the fire and passion grow, goals become clear, appropriate professional values are acquired, they finish their medical school experience with confidence and will often reflect on the mentors who were there and who made a difference.

For all of us who are, who could be, or who will be mentors, I conclude with the words of Tosteson, which place mentoring in the perfect perspective. "We must acknowledge that the most important, indeed, the only thing we have to offer our students is ourselves. Everything else they can read in a book."²⁰

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