

Redefining Scholarship: The Boyer Model

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Tenure and promotion criteria define an academic institution. At Texas Tech School of Medicine, the criteria are grouped in these categories: Scholarship, Teaching, Clinical Service, and Academically-related Public Service. Candidates for promotion to associate professor are expected to demonstrate excellence in one field, with meaningful participation in one other field. Candidates for professor are expected to show excellence in one field and meaningful participation in all three others. The thorniest problems facing the Tenure and Promotions (T&P) Committee relate to evaluation of a candidate's scholarship. The purpose of this editorial is to review the definition of scholarship proposed by Ernest Boyer (the Boyer Criteria) and to consider how the Boyer Criteria apply to tenure and promotions decisions.

A medical school has a double purpose: first, to train practitioners, and second, to advance the body of specialized knowledge. Before the Flexner Report (1910), it was easy; medical schools were trade schools, like schools of hair design. No academic considerations were necessary. After Flexner, under the leadership of institutions like Johns Hopkins, the paradigm shifted. Medical schools became post-graduate schools, based on the paradigm of biomedical science; the trade school morphed into a university. The Department of Medicine in the university model was like the Biology Department: do your research, write your papers, and teach our students, and the school (supported by the NIH) will pay your salary.

Unfortunately, legislatures and boards of trustees began to notice that doctors, unlike biology teachers, make a lot of money; they began to expect that clinical income would offset part of the cost of medical training. Faculty members at medical schools had to work like regular doctors—seeing patients, documenting

care provided, and actually submitting bills for service. Doctors who focused on clinical practice—sometimes to the exclusion of scholarship or research—were recruited. Criteria for academic advancement, however, often adhered to the old mode: count the number of articles published in peer-reviewed journals, multiply by the number of NIH grants, and there you have it. The new model, though, brought new challenges for the T&P committee: how to assess faculty members' accomplishments in this world of changing faculty expectations?

One approach to revamping the assessment of medical school faculty members was published by Ernest Boyer in his monograph *Scholarship Reconsidered: Priorities for the Professoriate* (1990).¹ Although this approach has its detractors (see the experience at the University of Louisville published in 2000)², many T&P committee members consider it a useful paradigm for assessing non-traditional kinds of scholarship.

Boyer divides scholarship into four categories, each of which deserves consideration as “real” scholarship. The first category is the *Scholarship of Discovery*. This includes laboratory or clinical research which increases the sum total of biomedical knowledge. If you want to win a Nobel Prize or get an NIH grant, this is the kind of scholarship you'd better focus on. It is measured by your high-impact publications, by your h-index, by your grant funding. This is the easiest kind of scholarship for the T&P committee to assess. You don't have to be a rocket scientist to recognize a rocket scientist.

But Boyer felt that other activities of medical school faculty members deserved to be considered under the rubric of scholarship. The second of these he termed *The Scholarship of Integration*. This includes “making connections across the disciplines, placing the specialties in larger context...often educating nonspecialists.” This scholarship reaches beyond facts for the larger meaning and often involves “interdisciplinary, interpretive [or] integrative” work.

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What would qualify as *Scholarship of Integration* for a medical school T&P committee? Some examples might include: designing an interdisciplinary course, writing a review article, developing a basic/clinical science integration seminar, or submitting a grant proposal for a multidisciplinary project. Writing an editorial for an electronic journal, for instance, would often be considered to be scholarship of integration.

Boyer's third category of scholarship was termed the *Scholarship of Application*. He points out that classical German scholarship was considered "an end in itself", but that American scholars often provided "equipment for service." Although the term "applied science" has a checkered history, in truth science should be applied to common human problems in order to be socially useful. Virology is a basic science, but the development of vaccines is socially useful. Devising a program to ensure that the maximum number of children are vaccinated is applied science at its highest.

What projects would document the *Scholarship of Application* on your next promotion cycle? Examples include: developing a Quality Improvement project, publishing a hospital protocol for fall prevention, writing a grant to teach safe sex practices to a high-risk population, or presenting a seminar to encourage clinical researchers to conform to current concepts of gender equity.

Finally, Boyer proposed that the *Scholarship of Teaching* should be included in the assessment of medical educators. He says that "the work of the professor becomes consequential only as it is understood by others" and that "teaching must be carefully planned, continuously examined, and relate directly to the subject taught."

How does the *Scholarship of Teaching* differ from the teaching already documented in your CV? Under the "teaching" heading, you document courses taught, the number of learners, outcomes data (if available), teaching awards, and evaluations of your teaching style and effectiveness. The *Scholarship of Teaching*, however, is more than this. It comes into play when a teacher does research into effective teaching methods, when a faculty member develops an innovative curriculum (e.g., Texas Tech's Sex and Gender Based Curriculum), or when an educator alters his or her syllabus according

to student feedback. On-the-ground development of a novel curriculum such as the FMAT (Family Medicine Accelerated Track), the use of new techniques to improve students' communication skills—all these represent examples of the scholarship of teaching.

Here's the point: scholarship in the professional school (School of Medicine, School of Nursing, etc.) extends beyond the bounds of scholarship narrowly defined. This is not to belittle the scholarship of discovery, which is essential to our mission. As trainers of practitioners, however, we value faculty members who never publish in the *New England Journal of Medicine* or *Science*. We value faculty members who integrate medicine into other disciplines (nursing, behavioral medicine, population health, economics). We value faculty members who study the application of medical knowledge outside the laboratory or the controlled study. We value faculty members who understand how best to educate, motivate, and change learners beyond the walls of the classroom.

The Boyer Criteria of scholarship (*discovery, integration, application, and teaching*) can expand the number of scholarly activities for which a medical school faculty member can be promoted. We encourage T&P committees to consider this expanded vision of scholarship in their deliberations. By so doing, innovative researchers, gifted clinicians, and charismatic teachers can be properly valued in the Tenure and Promotions process.

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2. Schweitzer L. Adoption and failure of the "Boyer Model" at the University of Louisville. *Acad Med*. 2000;75(9): 925-9.