

Scholarship in Teaching: An Imperative for the 21st Century

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ABSTRACT

At some medical schools broader definitions of scholarship have emerged along with corresponding changes in their academic reward systems. Such situations are not common, however. The definition of scholarship generally applied by medical schools is unnecessarily narrow and excludes areas of legitimate academic activity and productivity that are vital to the fulfillment of the school's educational mission. The authors maintain that creative teaching with effectiveness that is rigorously substantiated, educational leadership with results that are demonstrable and broadly felt, and educational methods that advance learners' knowledge are consistent with the traditional definition of scholarship. Faculty whose educational activities fulfill the criteria above are scholars and must be recognized by promotion.

The authors specifically address scholarship in education, focusing on teaching and other learning-related activities rather than on educational research, which may be assessed and rewarded using the same forms of evidence as basic science or clinical research. They build on Boyer's work, which provides a vocabulary for discussing the assumptions and values that underlie the roles of faculty as academicians. Next, they apply Glassick et al.'s criteria for judging scholarly work to faculty members' educational activities to establish a basis for recognition and reward consistent with those given for other forms of scholarship. Finally, the authors outline the organizational infrastructure needed to support scholars in education.

Acad. Med. 2000;75:887-894.

In this article, we specifically address scholarship in education, focusing on teaching and other learning-related activities rather than on educational research, which may be assessed and rewarded using the same forms of evidence as basic science or clinical research. We build on Boyer's work,¹ which provides a vocabulary for discussing the assumptions and values that underlie the roles of faculty as academicians, and apply the criteria of educational scholarship of Glassick et al.,² to assess scholarly work to determine which types of work should be rewarded. Finally, we outline the organizational infrastructure needed to support scholars in education.

BACKGROUND

Innovation, development, and change in medical education at a number of medical schools have carried with them a growing appreciation of the importance of education and teaching. At these schools broader definitions of scholarship have emerged along with corresponding changes in their respective academic reward systems. Such situations are not common, however. We observe that the definition of scholarship generally applied by medical schools is unnecessarily narrow and excludes areas of legitimate academic activity and productivity that are vital to the fulfillment of the school's educational mission. According to this narrow definition, scholarship is demonstrated only by research, peer review of results, and dissemination of new knowledge. For this reason, faculty who are essential to the core educational mission of their medical schools often are not promoted because they do not engage in accepted forms of scholarship. Yet, the same faculty may conceptualize, design, implement,

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or evaluate new curricula, interdisciplinary courses, assessment instruments, Web-based learning materials, and high-quality course syllabi. Others may excel as course directors, teachers, and/or highly respected role models. These educational activities may extend beyond the privacy of the classroom to the public domain, where the products of faculty educational efforts may be reviewed by peers and adopted by faculty at other schools. Some educators may be invited to share their expertise with faculty in their department or at other schools, and through presentations at regional or national meetings. Nevertheless, despite the peer review and dissemination inherent in these activities, they may not meet the current promotion criteria for scholarship.

We maintain that creative teaching with effectiveness that is rigorously substantiated, educational leadership with results that are demonstrable and broadly felt, and educational methods that advance learners' knowledge do reflect "the systematized knowledge of a learned person"³ and are consistent with the traditional definition of scholarship. As scholars, these faculty must be recognized by promotion.

PRINCIPLES, CRITERIA, AND RECOMMENDATIONS

The Group on Educational Affairs (GEA) of the Association of American Medical Colleges (AAMC) undertook a project to develop, disseminate, and facilitate the implementation of a broadened view of educational scholarship. After reviewing the evolving concepts of scholarship, the group developed four case scenarios to assess the applicability of these concepts to medical education. The cases, discussed at each of the 1999 GEA regional meetings and the 1999 meeting of the GEA and the Society of Directors of Research in Medical Education Curriculum, have been summarized⁴ and made available on the Internet (see <http://www.medlib.iupui.edu/cgea/geasclpro.html>). The written and oral feedback shaped development of the principles, criteria, and recommendations presented in the rest of this article. The GEA project on scholarship is predicated on the assumptions that

- educational scholarship can be defined;
- teaching and other activities supportive of learning can be scholarly;
- criteria, including peer review, for the assessment of scholarship in teaching and other activities supportive of learning can be refined and improved;
- teaching and other activities supportive of learning must be evaluated if they are to be recognized and rewarded as legitimate scholarly activities; and
- an organizational infrastructure for supporting educators as scholars must be developed.

Principles: Definition of Scholarship

Hansen and Roberts⁵ argue that scholarship is demonstrated when knowledge is advanced or transformed by application of one's intellect in an informed, disciplined, and creative manner. The resulting products must be assessed for quality by peer review and made public. In *Scholarship Reconsidered*,¹ Boyer did not make a clear distinction between excellent teaching and teaching as scholarship. This distinction has been defined by Hutchings and Schulman,⁶ who argue that teaching becomes scholarship when it demonstrates current knowledge of the field and current findings about teaching, invites peer review, and involves exploration of students' learning. Essential features of teaching as scholarship include the teaching's being public, being open to evaluation, and being presented in a form that others can build upon.⁶ As educators who accept responsibility for fostering scholarship in teaching, we not only must recognize the relative influences of the methods we use, but also should understand the reasons some methods are more effective than others.

Applying Scholarship to Teaching

Since a sustained record of scholarship is the foundation for advancement in academia, criteria for evaluating scholarship in teaching must be defined before teaching scholars' work can be assessed. Based on the criteria gleaned from more than 130 journal editors and granting agencies, promotion and tenure guidelines, and teacher evaluation forms, Glassick et al.² and Glassick⁷ distilled six criteria of scholarship that are applicable to traditional research as well as to teaching. Table 1 illustrates how Glassick's six criteria can be applied to evaluate scholarship in discovery (traditional research) and teaching.

Operationalizing the Criteria of Scholarship

Individual faculty. Teaching in various venues, including lecture, laboratory, small groups, and clinical settings, can be scholarly if appropriate evidence is presented to show that defined standards have been met. Other learning-related activities, such as advising or mentoring, developing curriculum or instructional materials, and educational administration also can be scholarly if appropriate evidence is presented. In contrast to the typical products of the scholarship of discovery (i.e., basic science, clinical, or educational research), which include grants and manuscripts that are published in the peer-reviewed literature, the products of scholarship related to education might include Web-based materials, textbook publications, curriculum units or teaching modules, continuing education presentations, curricular change, or community education. The challenge for educa-

Table 1

Application of Glassick et al.'s Six Criteria to Evaluate Scholarship in Discovery (Traditional Research) and Teaching		
Glassick's Criterion*	Application to Discovery	Application to Teaching
Clear goals	Clarity of hypotheses; importance of questions	Clear, achievable, measurable objectives
Adequate preparation	Appropriate knowledge; ability to assemble necessary resources	Up-to-date knowledge; identification and organization of an appropriate quantity and level of material specific to objectives
Appropriate methods	Proposed study design will answer question; appropriate statistical analysis for design	(1) Selection of appropriate teaching methods(s) to meet defined objectives (2) Selection of appropriate assessment measures to evaluate outcomes
Significant results	Hypothesis tested and proved or disproved	(1) Measures of quality/effectiveness of presentation (2) Demonstration of learners' accomplishment of objectives
Effective presentation	Publication or presentation in public domain	Making results/process available to colleagues
Reflective critique	Critical reflection on results to guide the direction of relevant additional research	Critical analysis of teaching activity that results in changes to improve

* From Glassick CE, Huber MR, Maeroff GI. *Scholarship Assessed—Evaluation of the Profession*. San Francisco, CA: Jossey-Bass, 1997.

tors is to provide the evidence that demonstrates the scholarly nature of these activities. Table 2 illustrates the kinds of evidence that can be used by educators to demonstrate that they have met Glassick et al.'s² scholarship criteria for four common roles of educators: lecturer, preceptor in clinical settings, tutor or small-group leader or facilitator, and educational administrator. The table presents each criterion, and for each poses the associated questions that must be answered about each role to demonstrate scholarship through presentation of evidence.

Infrastructure needed to foster, assess, and reward scholarship in teaching and other activities supportive of learning. Developing the evidence associated with educational scholarship requires that departments, medical schools, universities, and professional organizations provide mechanisms to support the creation, critical review, and dissemination of educational scholars' works. Without this organizational infrastructure, faculty will continue to struggle as educators and scholars who advance knowledge within the field of medical education. Infrastructure support to advance knowledge within medical education, including scholarship in teaching, requires local institutions and national organizations to provide resources equivalent to those that support traditional basic science and clinical research. Medical schools and professional organizations have mechanisms to support peer-reviewed research, but parallel mechanisms

for peer review of teaching scholarship are highly variable, particularly if the scholarly products are instructional videotapes, CD-ROMs, course syllabi, or teaching, rather than manuscripts.⁸

Advancing teaching scholarship requires a systematic examination of the degree to which each medical school and professional organization has the infrastructure to support faculty as educators. Bolman and Deal⁹ outline four "frames," or perspectives, from which to analyze organizations based on extensive review of the organizational development literature and their broad-based consultation experiences. We believe that educators can use this frame approach to assess the adequacy of the infrastructures in their respective medical schools and their professional organizations to support teaching and education-related activities as scholarship. Based on that assessment, educators can target key features within a frame to address current needs, as Bolman and Deal report that omissions in any single frame will limit the ability of organizations and individuals to advance toward achieving their potential. Examples of features within each frame (discussed below) are provided in List 1 from both medical-school and professional-organization perspectives following an overview of the four-frame model.

Frame 1: Structural. The structural frame of a medical school and its associated academic health science center may be ascertained by viewing their organizational charts and in-

Table 2

Criteria for Scholarship, and the Associated Questions That Must be Answered about Each of Four Common Roles of Educators to Provide Evidence of Scholarship				
Criterion*	Questions about a Lecturer	Questions about a Preceptor in the Clinical Setting	Questions about a Tutor/Small-group Leader/Facilitator	Questions about an Education Administrator
Clear goals To what extent does the individual . . .	<ul style="list-style-type: none"> ■ articulate clear, realistic, achievable goals/objectives that relate to the course/clerkship expectations and level of the learners? ■ appropriately sequence goals and objectives, and state them in the context of basic knowledge and/or important/current questions in the field? 	<ul style="list-style-type: none"> ■ develop clear goals and objectives that are realistic and achievable in the setting (e.g., inpatient ward, outpatient clinic), and consistent with course expectations and level of learners? ■ modify them in response to "teachable moments" and changes in the clinical setting? 	<ul style="list-style-type: none"> ■ help the group define intellectual problems that reflect current knowledge in a field of study in terms of objectives that specify measurable outcomes? ■ structure the desired outcomes for the session in a way that is realistic and achievable? 	<ul style="list-style-type: none"> ■ provide clear, realistic and achievable visions, missions, goals, or objectives consistent with the administrative activity (e.g., course director, committee chair, residency, program director, associate or assistant dean)? ■ develop and articulate desired directions based on knowledge of current trends in the field?
Adequate preparation To what extent does the individual . . .	<ul style="list-style-type: none"> ■ use accurate, current resources to develop the content of lectures? ■ select, synthesize, and interpret material matched to the level of the learners? ■ demonstrate command of basic concepts and current thinking? 	<ul style="list-style-type: none"> ■ use and recommend up-to-date, varied learning resources? ■ use course goals and objectives and current trends in patient care to prepare and focus teaching encounters? 	<ul style="list-style-type: none"> ■ combine thoughtful planning about the group and individual learning needs with the defined learning objectives? ■ seek and acquire current knowledge of subject matter and teaching methods? 	<ul style="list-style-type: none"> ■ apply current relevant concepts in the field to local organization? ■ assemble the necessary resources (people, financial) strategically to develop and implement a plan?
Appropriate methods To what extent does the individual . . .	<ul style="list-style-type: none"> ■ use methods that reveal the logic, organization, and relevance of the material? ■ match the quantity of material to audience level and allotted time? ■ use images, metaphors, analogies, and examples that connect the subject matter to the students' experience and knowledge? ■ demonstrate responsiveness to learners' reactions during the presentation? 	<ul style="list-style-type: none"> ■ allow sufficient time for interaction with the learner? ■ ask questions to promote learning? listen critically and respond informatively? ■ provide specific timely feedback and recommendations for improvement? ■ establish and maintain a climate conducive to learning? ■ modify his or her approach to the learner over time? 	<ul style="list-style-type: none"> ■ skillfully apply teaching methods to the situation? ■ adapt methods as the circumstances change? ■ question, respond, motivate, and reflectively critique through role modeling and feedback? 	<ul style="list-style-type: none"> ■ recognize obstacles or challenges and address them effectively? ■ use methods that are consistent with accomplishment of the desired outcomes?
Significant results To what extent . . .	<ul style="list-style-type: none"> ■ do learners' narrative comments and ratings indicate that the lecturer achieved the goals and objectives of the presentation? ■ does learners' performance on comprehensive, cumulative examinations, demonstrate achievement of objectives? ■ does the lecturer model teaching techniques that are adopted/ adapted by other faculty members? 	<ul style="list-style-type: none"> ■ do learners' cognitive, procedural, and presentation skills become more focused and improved over time? ■ do learners' questions improve in quality over time? ■ do learners demonstrate ability to analyze clinical problems better and work more independently over time? 	<ul style="list-style-type: none"> ■ are educational outcomes achieved? ■ is there evidence that written assessment has constructive impact on learners? 	<ul style="list-style-type: none"> ■ were the desired changes and results achieved? ■ were the outcomes assessed to determine effectiveness of the intervention?

Effective presentation

To what extent does the individual . . .

- communicate to learners evidence of systematic application of one's intellect?
 - demonstrate enthusiasm and interest in the topic?
 - deliver the message with clarity and organization?
 - provide handout material matched to the goals and objectives of the presentation?
 - capitalize on the spontaneous occurrence of "teachable moments" during the presentation?
 - present difficult topics in ways that help students learn?
- provide clear explanations and stimulate learners based on learner and peer evaluation?
 - provide evidence of valuing teaching by sharing methods and experiences with colleagues?
 - mentor newer or less experienced teachers?
 - have his or her peers recognize and adopt/adapt the clinician's teaching methods?
- help the group establish clear standards and expectations for the group and the individuals?
 - facilitate discussion of content, provide and facilitate feedback and assessment (written and oral)?
 - discuss outcomes of sessions and related strategies with other facilitators?
 - influence other facilitators' skills in group process, facilitation, feedback, and assessment (e.g., sharing innovative techniques with colleagues through formal or informal discussions, presentations, publications, or faculty development seminars)?

- ensure that the results are shared with others?
- illustrate/document project process and content?
- enhance stakeholders' (students, colleagues, etc.) understanding and valuing the project results?
- ensure that educational strategies are adapted/adopted locally or nationally for use in other courses, departments, or schools?

Reflective critique

To what extent does the individual . . .

- enhance his or her teaching skills through reading, discussion with colleagues, or participation in workshops?
 - seek and respond to feedback regarding his or her teaching?
- talk with colleagues about critical teaching incidents?
 - translate insights from reflective critique to teaching practices?
- respond constructively to student and peer feedback to improve and advance his or her skills as a teacher and facilitator?
 - acquire new or advanced educational skills relevant and applicable to group facilitation?
- respond to stakeholders' critiques?
 - engage in continuing professional development to hone relevant administrative skills?
 - actively seek feedback from students and peers inside and outside the institution as appropriate regarding the project/course?
 - reflect about what went well and what could be improved for future projects?
 - use results to develop and implement strategies for ongoing assessment (continuous quality improvement)?

* The criteria are from Glassick CE, Huber MR, Maeroff GI. *Scholarship Assessed—Evaluation of the Professoriate*. San Francisco, CA: Jossey-Bass, 1997.

List 1

Department/Medical School	Professional Organization
Four "Frames" Illustrating How Key Infrastructure Features of Medical Schools and Professional Organizations Can be Structured to Support Scholarship in Teaching and Related Education Activities*	
<p>Frame 1: Structural</p> <p><i>Education leadership positions, listed on organization chart</i></p> <ul style="list-style-type: none"> ■ Equivalent to research and/or clinical practice positions ■ Direct reporting line to dean, president ■ Office of Medical Education <p><i>College-wide medical education office, committee, or individual</i></p> <ul style="list-style-type: none"> ■ Peer reviews course/clerkship design, residency curriculum, CME programs ■ Collects, analyzes, and reports data on courses, clerkships, residency, CME programs from learners and peers ■ Provides data in a comparative form that allows others to judge one's quality as a teacher relative to peers ■ Peer-reviewed mechanism to award start-up funds for innovative educational projects or programs, parallel to seed money for new research investigators <p><i>Medical school library/Web site to access</i></p> <ul style="list-style-type: none"> ■ Journals and books specific to medical education (e.g., <i>Academic Medicine</i>, <i>Teaching and Learning in Medicine</i>, <i>Journal of Continuing Education in the Health Professions</i>, and medical education topics in the Springer series of books) ■ Specialty journals that publish articles about education (e.g., <i>Advances in Physiology Education</i>, <i>Anatomical Record</i>) ■ Web links to offices or services for medical educators <p><i>Education facilities and support personnel</i></p> <ul style="list-style-type: none"> ■ Computer projection equipment, on-line lecture halls ■ Computer labs, standardized patient rooms 	<p><i>Formal affiliation opportunities for educators</i></p> <ul style="list-style-type: none"> ■ Committees, sections, or special-interest groups that have teaching and education as their primary focus ■ Reporting lines to "power" positions or committees ■ Members of organization's decision-making body <p><i>Peer review committees/panels</i></p> <ul style="list-style-type: none"> ■ Peer evaluation of submissions ■ Comparative peer evaluation of conference presentations ■ Presented materials are disseminated after professional meetings (e.g., searchable Web site, indexed supplements to the association's journal) <p><i>Society's journal publishes peer-reviewed education papers</i></p> <ul style="list-style-type: none"> ■ Educational innovations ■ Curricular change ■ Teaching strategies ■ Assessment measures ■ Faculty development <p><i>Education clearinghouse/bookstore</i></p> <ul style="list-style-type: none"> ■ Individuals submit materials for peer review and dissemination products (e.g., Society of Teachers of Family Medicine, Association for Surgical Educators, American Physiological Society)
<p>Frame 2: Human Resources</p> <p><i>Orientation programs about medical education</i></p> <ul style="list-style-type: none"> ■ For new faculty to the field of medical education and its theories of teaching and learning ■ For new course/clerkship directors, residency program directors to develop skills relevant to running an educational program ■ For new members on education-related committees ■ For promotion and tenure committee members to evaluate teaching- and learning-related scholarship knowledgeably <p><i>Education handbooks/Web-based materials</i></p> <ul style="list-style-type: none"> ■ For course/clerkship, residency program directors, which include training materials and contacts, resources, policies, and procedures ■ "How-tos" regarding operation of projection system, writing objectives <p><i>Faculty development programs/workshops</i></p> <ul style="list-style-type: none"> ■ Curriculum development, teaching, scholarship, new advances and innovations in education, measurement, and evaluation ■ Process and preparation of promotion-related materials to document education as scholarship ■ Senior colleagues and peers available to guide and advise individuals interested in education <p><i>Hiring process for education positions</i></p> <ul style="list-style-type: none"> ■ Competitive application and hiring processes for course, clerkship, and residency director positions that require expertise in education 	<p><i>Fellowships in medical education</i></p> <ul style="list-style-type: none"> ■ Teaching-career-advancement fellowships (e.g., American Physiological Society) <p><i>Educational resource materials</i></p> <ul style="list-style-type: none"> ■ Society-supported guidelines, materials that allow educators to design education based on the work of others (e.g., American Physiological Society, Clerkship Directors in Internal Medicine, Council on Medical Student Education in Pediatrics, and AAMC Medical School Objectives Project) ■ Recommendations re: how to document activities for promotion as clinician educators (e.g., Association of Surgical Educators, Society of Teachers of Family Medicine, Society of General Internal Medicine) <p><i>Faculty development programs/workshops</i></p> <ul style="list-style-type: none"> ■ Workshops and annual refresher courses for faculty interested in enhancing their education skills (e.g., AAMC Group on Educational Affairs, the American Association of Clinical Anatomists, and the GEA/Society of Directors of Research in Medical Education)

Continued on next page

List 1 (Continued)

Department/Medical School	Professional Organization
<p>Frame 3: Political <i>Selection/election/appointment process for key positions</i></p> <ul style="list-style-type: none"> ■ Educators/educational advocates involved in the nomination and selection of promotion and tenure committee members ■ Educators serve as members of chair/dean search committees <p><i>Educators in leadership positions</i></p> <ul style="list-style-type: none"> ■ Chairs or members of key faculty committees, working groups, and executive committees ■ Direct/influence the recognition, reward, and resource allocations for education ■ Serve as members/chairs for promotion and tenure, faculty incentive systems ■ Education committees hold budgetary resources <p><i>Educators form coalitions to influence decisions</i></p> <ul style="list-style-type: none"> ■ Course, clerkship, and residency program directors, education committees collectively advocate education-specific resource allocations, facilities, space, equipment 	<p><i>Selection/election/appointment process for key positions</i></p> <ul style="list-style-type: none"> ■ Educator advocates (EAs) have influence on the leadership selection process ■ Educators serve on nominating committee <p><i>Educators in leadership positions</i></p> <ul style="list-style-type: none"> ■ EAs serve as members/chairs of key decision-making committees ■ EAs influence/direct resource allocation, including funds and numbers, times of annual meeting slots ■ EAs influence/participate in policy and bylaw decisions <p><i>Educators form coalitions to influence decisions</i></p> <ul style="list-style-type: none"> ■ Collectively advocate education-focused resource allocations, clearing-house, staff to support education projects, prominent presence on early page of organization's Web site
<p>Frame 4: Symbolic <i>Public documents</i></p> <ul style="list-style-type: none"> ■ Department/medical school executive committee agendas have a standing education line item ■ Outstanding educators are featured in the organization's promotional brochures (e.g., the alumni bulletin, fund-raising brochures) <p><i>Rituals/traditions/ceremonies</i></p> <ul style="list-style-type: none"> ■ Individuals who were selected to serve as NBME item writers, reviewers for educational grants, national Alpha Omega Alpha teaching award nominees, and creators of educational CD-ROMs are recognized at convocation ■ Outstanding department teaching award recipients honored at all-department faculty meeting in formal ceremony lead by chair ■ Convocation address focuses on education ■ Board of trustees/dean present at education events <p><i>Department/medical-school-wide public forums</i></p> <ul style="list-style-type: none"> ■ Annual distinguished lectureship on education attended by leaders of position and influence ■ Education is periodic focus of grand rounds and regular topics for departmental noon conferences 	<p><i>Public documents</i></p> <ul style="list-style-type: none"> ■ Annual meeting program contains descriptions of awards and recognition for educators ■ Newsletters and annual reports contain updates about innovative education, calls for awards, descriptions of award recipients ■ Web site lists education committees, activities, and resources <p><i>Rituals/traditions/ceremonies</i></p> <ul style="list-style-type: none"> ■ Honorary group for individuals who have made sustained contributions to education (e.g., member of Central Group on Educational Affairs, Medical Education Laureate, AOA Teaching Awards) ■ Recipients of organization-supported funding awards honored at meeting <p><i>Public forums</i></p> <ul style="list-style-type: none"> ■ Annual lectureship or plenary presentation focused on education ■ Listserves for educators
<p>* The above four frames for organization analysis are adapted from the four frames, or perspectives, developed by Bolman and Deal. (See Bolman LG, Deal TE. Reframing Organizations. San Francisco, CA: Jossey-Bass, 1997.)</p>	

stitutional policies and procedures. These diagrams and documents indicate the positions, roles, and reporting lines of faculty, potential resources available to support teaching scholarship, and their relationships to the formal structures associated with undergraduate, graduate, and continuing education. Using the structural frame to examine organizations reveals the degree to which mechanisms are available for critical review of scholarship in teaching and to disseminate teaching products to advance knowledge in the field.

Frame 2: Human resources. The human resources frame is a way to view key variables of people's knowledge, skills, attitudes, and energy that either make or break an organization. People, in this frame, are seen as an investment toward achieving the organization's priorities. Analyzing medical schools and academic societies from the human resources frame allows educators to assess the extents to which these organizations support continuous advancement of their faculty members' knowledge, skills, and behaviors as educators.

Frame 3: Political frame. As resources within medical schools and our professional organizations become more constrained, educators must actively direct or informally influence decisions that determine priorities and resource allocations. From a political perspective, educators must utilize their power if they are to make progress within organizations that will support scholarship in teaching. Clinician and basic science educators must serve as members of formal and informal policy-setting groups, serve as members/chairs on key academic, clinical, and administrative committees, and form coalitions with other educators to effectively advocate changes needed to enhance the quality of education. Bolman and Deal argue that the political frame assumes that an organization's goals are not set from the top, but through an ongoing process of negotiation and interaction among the key players. Educators must become key players who effectively negotiate within the organization.

Frame 4: Symbolic. An organization's symbolic activities communicate its values, who its members are, and how these members are to participate in the organization. The symbolic frame focuses on the use of these symbolic activities to disclose what the organization communicates about its values and culture through its traditions, stories, myths, and rituals. Consider, for example, how publicly and how prominently educators' activities and accomplishments are displayed in our medical schools and by their academic societies. The content of meetings of departments, the faculty council, executive committees, and deans, and the content of college publications and events reveal what is valued by our medical schools. Educators must use these symbolic forms of communication to emphasize that education is a valued part of our medical schools and academic societies.

SUMMING UP

Through a systematic application of the criteria of Glassick et al. to four typical educator roles, we have illuminated the questions that faculty must ask of their work and their colleagues' work as educators to ascertain scholarship in education, particularly in teaching. Most medical schools and professional organizations lack the infrastructure to enable educators to answer these questions and thereby to put education, especially teaching, on the same level as research and other types of scholarly activities. We must evolve continuously our organizational structures, human resources activities, political coalitions, and symbols to support scholarship in education. We must create more forums for the

peer review of educational materials, curricular innovations, assessment tools and instruments, standardized patient cases, and other products of educational scholarship. Our universities, medical schools, academic health science centers, and professional organizations are vital components of this infrastructure, for without them, we have no community of education scholars with whom we can share, collaborate, and exchange our work as we seek to advance the quality of education provided to our future physicians and biomedical scientists.

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