A SPECIAL REPORT

Scholarship Assessed

EVALUATION OF THE PROFESSORIATE

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CHAPTER TWO

Standards of Scholarly Work

TO GIVE THE FOUR KINDS OF SCHOLARLY ACTIVITIES the weight that each deserves, they all must be held to the same standards of scholarly performance. The paradox is this: in order to recognize discovery, integration, application, and teaching as legitimate forms of scholarship, the academy must evaluate them by a set of standards that capture and acknowledge what they share as scholarly acts.

Faculty handbooks seldom highlight the qualities and characteristics common to the different kinds of scholarship. Rather, current wisdom assumes that research, teaching, and applied scholarship—the kinds of faculty activities recognized for purposes of evaluation on most campuses—each has its own special yardstick.

In judging research, each discipline uses its own criteria, while estimates of teaching abilities tend to ignore strategies specific to subject matter. Service is in a league of its own. The activities that count as professional and/or public service may be identified, but aside from the general expectation of "high quality" in such work, handbooks offer scant guidance as to what quality might mean. Indeed, the University of California is unusual in its thoughtful requirements for practitioners in its professional schools. It singles out "leadership in the field" and "demonstrated progressiveness in the development or utilization of new approaches and techniques for the solution of professional problems."[1]

Most college and university guidebooks implicitly suggest that different *types* of standards apply to different kinds of faculty work, leaving the impression that

standards for research and creative work come from the various disciplines; standards for teaching are institutionally defined; and standards for professional service vary so greatly by project and profession that hardly any guidance can be offered. This fragmented paradigm reflects the differential respect accorded research, teaching, and applied scholarship at most institutions. It also, we believe, helps to perpetuate the hierarchy that places greatest importance on research. As Lee Shulman observed, "Like it or not, the forms of scholarship that are seen as intellectual work in the disciplines are going to be valued more than forms of scholarship (such as teaching) that are seen as non-disciplinary."[2] One can understand how teaching and applied work often suffer devaluation in this taxonomy of unequals.

In recent years, though, academics have opened discussion about standards for teaching and applied scholarship at both the national and campus levels. The disciplinary associations have begun to address this issue. The American Mathematical Society, for example, has pioneered an ambitious program to improve the teaching of calculus and to define the qualities of good undergraduate teaching in mathematics. Scholars doing applied work in most of the humanities and social sciences are organizing sessions at disciplinary conferences and airing substantive methodological and ethical concerns in newsletters and journals. Even integrative scholarship claims the attention of growing numbers of disciplinary peers; for instance, the *Journal of American History* now regularly reviews museum exhibitions. "Museum exhibits and their related elements are a distinct medium for identifying, organizing, comparing, analyzing, and communicating historical information and interpretation," the editor of the reviews wrote.[3]

The emerging climate at colleges and universities supports the idea that different types of scholarly work merit formal consideration. In experiments across the country, faculty are assembling a wide variety of evidence to demonstrate their achievements in the four areas of scholarship. Many institutions are also trying to improve how peers are brought into the review of teaching. Shulman captures the mood precisely when he speaks of making teaching "community property,"[4] while the aptly titled theme of the 1995 AAHE Conference on Faculty Roles and Rewards was "From 'My Work' to 'Our Work.'"[5]

Reform, however, seldom moves evenly on all fronts, and innovative attempts to broaden definitions of scholarship are likely to remain pilot efforts if institutions do not also change the standards by which they evaluate scholarship for purposes of faculty retention, promotion, and tenure. As Richard Chait noted, recognizing different forms of scholarship involves "less certainty about the qualities and characteristics of scholarship—about what should count."[6] Clearly, evaluation that uses different standards for research, teaching, and professional service has outlived its day. Academia needs a single standard, but it cannot implement that standard simply by applying to other forms

of scholarship the traditional criteria that have usually been used for judging research.

What are the common features that enable scholars involved in different fields of study and different types of scholarly work to feel they are engaged in a common task? Wayne Booth observed that the academic world has an evaluative language beyond the disciplinary or professional rhetoric of the cutting edge. Booth said that faculty already can use this common evaluative language to ask if a colleague's "style of presentation . . . accords with standards we recognize," to examine the general quality of someone's reasoning, and to see whether talking with a colleague adds to one's own intellectual life.[7]

Could there lie in this public square some clues that might help us find a vocabulary to define the common dimensions of scholarship? Are there already some general standards available for judging scholarly performance?

In an attempt to answer these essential questions, we accumulated a voluminous file of documents, including guidelines on hiring, tenure, and promotion practices from dozens of colleges and universities. We also got responses from fifty-one granting agencies and from editors and directors of thirty-one scholarly journals and fifty-eight university presses whom we asked about the standards they use to decide the scholarly merit of proposals and manuscripts. In addition, we collected many of the forms that institutions provide to students and occasionally to faculty peers to evaluate college teaching.

Ostensibly, these lists of standards and criteria vary considerably. Some are long, some short. Some are systematic, some jumbled. Many include items tailored to specific needs. The National Science Foundation, for instance, is interested in the effect a proposed project might have on the infrastructure of science and engineering.[8] Before publishing an article, the *Journal of Organic Chemistry* wants to know if the compounds reported are "adequately characterized with regard to identity and purity";[9] the University of California Press, as many other university publishers, asks hopefully: is a manuscript "likely to be required reading in specific undergraduate or graduate courses?"[10]

The most remarkable feature of these various guidelines, though, is not how much they contain that is unique but the degree to which they share elements. Our survey of standards indicates that the key to these commonalities lies in the *process* of scholarship itself. If this process can be defined with some clarity, it will provide terms by which scholars can discuss almost any project without denying either its uniqueness or its connections to other projects, whatever the discipline or type of scholarship. Indeed, we found it possible to identify in these lists and guidelines a set of six shared themes. All works of scholarship, be they discovery, integration, application, or teaching, involve a common sequence of unfolding stages. We have found that when people praise a work of scholarship, they usually mean that the project in question shows that it has been guided by these qualitative standards:

1. Clear goals
2. Adequate preparation
3. Appropriate methods
4. Significant results
5. Effective presentation
6. Reflective critique

It is important, we believe, to give these familiar standards—already in common use—explicit articulation. Everyone will recognize them one by one, but taken together, they provide a powerful conceptual framework to guide evaluation. Their very obviousness suggests their applicability to a broad range of intellectual projects.

Clear Goals

A scholar must be clear about the aims of his or her work. The first issue that many reviewers are asked to address in their evaluations of manuscripts and grant or fellowship proposals concerns the scholar's goals. The *American Journal of Sociology* asks, "Is an important issue being addressed?"[11] The Johns Hopkins University Press, in its review of a scholarly manuscript, inquires, "What is the author's goal?"[12] The journal *Environmental Science and Technology* wants to know, "Is the basic question to be addressed clearly stated?"[13]

We also found a strong emphasis on goals when it comes to assessing teaching. One evaluation instrument asks, "Did the professor clearly state the objectives of the course?" Another wants to know, "Did the proposed objectives agree with those actually taught?" At the University of Kentucky, professors being reviewed for promotion and tenure are asked to submit a brief, reflective statement that sets forth their philosophy and objectives as teachers.[14] The clarity of goals was considered for works of applied scholarship as well. The National Institute of Justice, which funds projects for the U.S. Department of Justice, wants to know, "Does the proposal address a critical issue or aspect of the problem area?"[15]

These, then, are questions that ought to be asked about all types of scholarly work:

- Does the scholar state the basic purposes of his or her work clearly?
- Does the scholar define objectives that are realistic and achievable?
- Does the scholar identify important questions in the field?

Goals precede all other considerations because to plan, carry out, and present any scholarly project, a scholar must know what questions to ask. A master scholar is a master question-raiser—a designation that fits, almost by definition, anyone who can be called a pathbreaker in scholarly and creative work. The most basic lessons taught to students in their graduate training involve learning how to see and state an intellectual problem. The Council of Graduate Schools noted in describing the nature and purpose of doctoral programs: "A well-prepared doctoral student will have developed the ability . . . to apply appropriate principles and procedures to the recognition, evaluation, interpretation, and understanding of issues and problems at the frontiers of knowledge."[16]

Scholarly work usually has multiple goals, making it crucial that the scholar define each goal clearly within *all* relevant contexts, disciplinary or interdisciplinary, public or professional, and educational as well. For example, a teacher may select an intellectually significant problem for a new course but teach poorly because of ill-defined pedagogical goals. "Bad teaching most often results from a pursuit of the wrong ends, either because the teacher is unclear about his or her purposes or because plausible but harmful purposes get in the way of good ones," Booth observed.[17] Only by stating objectives clearly can the stage be set for conversations about appropriateness of goals.

Having clear goals also means understanding a project's scope. Good guiding questions help the scholar define a project, give it structure, recognize relevant material, identify exceptions, and see new possibilities. Of course, the goals of a project may shift over time. Much of the excitement of scholarly work comes when a particular line of inquiry leads to new questions and these lead to new ones again.

A scholar's goals must also be realistic, taking account of the limitations and the possibilities of the situation. Hopelessly grandiose goals may fade into irrelevancy. Goals should be practical and defensible. Even clear objectives hold little value if they cannot be reasonably met.

Adequate Preparation

The documents we examined repeatedly identified adequate preparation as one of the most basic aspects of scholarly work. The University of Alabama Press, for example, asks this question of reviewers: "Does the scholarship appear current?"[18] In other words, has the scholar's preparation for the investigation adequately considered the state of the field? The University Press of New England asks, "Is the author in command of both primary sources and the standard secondary literature of the field?"[19] Regarding teaching, one evaluation instrument we looked at asks, "Did the instructor display a clear understanding of the course topics?" and "Was the instructor well prepared for each class?" Agencies that support applied projects agree. The Mott Foundation, for example, wants

to know: "Does the applicant have the leadership and staff competence to carry out the project, or the ability to secure those essential resources?"[20]

Any evaluation should consider the following questions when assessing a scholar's achievements:

- Does the scholar show an understanding of existing scholarship in the field?
- Does the scholar bring the necessary skills to his or her work?
- Does the scholar bring together the resources necessary to move the project forward?

The pursuit of scholarly work depends, fundamentally, on the depth and breadth of the scholar's understanding of subject matter. Every scholar bears a responsibility to keep up with the literature in the field in which he or she works. Scholarship is, in essence, a conversation in which one participates and contributes by knowing what is being discussed and what others have said on the subject. Therefore, a project that does not speak to current issues of theory, fact, interpretation, or method is unlikely to contribute to its field, regardless of other virtues.

Artistry necessarily accompanies knowledge in the projects a scholar undertakes. All scholarly work involves practical skills and rules of thumb that one usually learns by doing and by observing the work of others. This is what Shulman called "the wisdom of practice" in teaching, what Donald Schön described as "reflection-in-action" in applied work, and what C. Wright Mills called "the practice of a craft" in research.[21] Such know-how is crucial even in the heartland of basic science, the laboratory itself, where, as Jacob Bronowski observes, "the skill of head and hand go together."[22] Mastery of necessary skills should be taken into account in evaluating a scholarly project.

Professional preparation also requires one to ascertain the availability of the right resources for the project at hand. A scholar, in weighing the human resources, should know who is doing similar work, who is supporting such work, and who is interested in the findings. A particular project might require, for example, such background work as learning a new language or exploring new software. Resources, of course, can determine the success or failure of a project, and questions about resources are pertinent in evaluating adequacy of preparation. Was the scholar imaginative and thorough in finding source material? Were the resources adequate for the project? Did the scholar use the resources as well as possible?

Appropriate Methods

As a third standard, scholars also must use procedures appropriate to the project, choosing methods wisely, applying them effectively, and modifying them judiciously as a project evolves. Virtually all evaluating agencies inquire into

the merit of a scholar's methods. The University of Iowa Press, in judging a scholarly manuscript, asks, "Is the scholarship adequate in terms of methodology?"[23] The journal *Physical Review Letters* expresses it this way: "Is the work scientifically sound?"[24] The journal *Child Development* urges reviewers to consider "the formal design of the research," that is, its methodology.[25] Kansas State University judges the quality of projects in terms of the "development and application of effective ways to identify problems and assess needs."[26]

Methods and procedures make a great difference in teaching. This is true from the logic of the syllabus to pedagogical procedures and student assessment. One teacher evaluation instrument asks, "Were the methods of evaluating student work fair and effective?" Another wants to know, "Was the amount of material the instructor attempted to cover appropriate?" Students at Clemson University are asked whether the course was "presented in a logical sequence."[27] The State University of New York College at Old Westbury looks at the professor's "responsiveness to the distinctive and varied needs of our students" and "successful experimentation with varied approaches to teaching."[28]

We suggest, then, that evaluators ask these questions about a scholar's work:

- Does the scholar use methods appropriate to the goals?
- Does the scholar apply effectively the methods selected?
- Does the scholar modify procedures in response to changing circumstances?

At the most basic level, appropriate methodology gives a project integrity and engenders confidence in its findings, products, or results. To gain standing among scholars, a project must use methods recognized in the academic community. Edward Shils said: "The obligations of the academic profession are inherent in the custodianship of the pursuit, acquisition, assessment, and transmission of knowledge through systematic study, in accordance with methodical procedures including observational techniques, rules of evidence, and principles of logical reasoning."[29] Shils's observation is most obvious in scientific research, where reason and experiment have often defined what science is and what it is not. All fields of scholarly inquiry are both theoretical and methodical, although the method may not be the kind of controlled observation that the phrase *scientific method* usually conveys.

The choice of method is critical because upon it depends not only the project's chances for success at discovery, integration, application, or teaching but also the likelihood that colleagues will understand and accept the project. Scholars who favor quantitative studies, for example, may be reluctant to accept findings based on qualitative approaches, whatever the intrinsic merit of the work. Yet all scholars would probably concede the value of approaches other than their own, however incompatible the methodological styles. They might argue

for the primacy of one approach or another, but most important is that the method selected be carefully justified and appropriate to the project's goals.

Scholars have an obligation to carry out their projects competently. To expect a project to unfold according to the method outlined, however, is not to ask a scholar to follow blindly a detailed, preconceived plan. Scholarship does not and should not proceed like that. Flexibility is essential to allow the scholar to respond to change, to pick up a clue and follow it as a project proceeds, and even to redesign the project itself. C. Wright Mills advised the young scholar to "be a good craftsman: Avoid any rigid set of procedures . . . let theory and method again become part of the practice of a craft."[30] This admonition holds for the mature scholar as well.

Significant Results

Any act of scholarship must also be judged by the significance of its results. A project should contribute to knowledge or to artistic expression, stimulate learning, or, where appropriate, help solve problems outside the academy. Publishers and journal editors are invariably direct about this standard when they consider manuscripts reporting findings from research. The University of Hawaii Press asks, "What has the author accomplished?"[31] The University of Arizona Press wants to know if the manuscript "makes a significant contribution to the literature."[32] And the *Journal of Physical Chemistry* asks if the manuscript has "extremely important results."[33] The scholarship of application also is judged by outcomes. At the University of Illinois, peers are asked to comment on the extent to which a colleague's service activity has made a substantial contribution that is "recognized by other scholars, public policy makers, or practitioners."[34]

Teaching, too, must in the end be judged not merely by process but by results, however eloquent a teacher's performance. The evaluation forms we studied ask students questions that clearly seek to measure the significance of what they learned: "Was your interest in the subject stimulated by this course?" "Did you improve your competence due to this course?" "Did you learn something you consider valuable?"

The following questions, we believe, help colleagues chart the significance of a scholar's work:

- Does the scholar achieve the goals?
- Does the scholar's work add consequentially to the field?
- Does the scholar's work open additional areas for further exploration?

To ask that the outcome of a scholarly project have significance is to ask, first, that it meet its own goals. Its results, in other words, should have meaning

within the parameters that the scholar has set for the project. A course in which students conduct their own research under faculty supervision should show evidence that students gained insights into methods of investigation. A consultation should actually help clients while contributing to the scholar's understanding of the general issues involved. Experiments that aim to unearth new findings should in fact do so—even, of course, when the findings simply eliminate a hypothesis by concluding that "no significant difference was found." A book designed to introduce an arcane topic to a nonacademic audience should reach that group of readers with the requisite integrity, imagination, and style.

A fundamental indication of a project's significance is its contribution to the field. Chemist-philosopher Michael Polanyi once suggested that scientists typically judged scientific research by its plausibility, originality, and scientific value—"a composite," explained science writer Richard Rhodes, "consisting of equal parts accuracy, importance to the entire system of whatever branch of science the idea belonged to, and intrinsic interest."[35] Many scholars use some variant of this scheme in judging a work's contribution. Of course, the language of praise varies among the disciplines. Anthropologist Clifford Geertz observed that mathematicians speak of the differences between "'deep,' 'elegant,' 'beautiful,' 'powerful,' and 'subtle' proofs"; physicists talk of "such peculiar words of praise and blame as 'tact' or 'skimming'"; and literary critics invoke "the relative presence of a mysterious property, to outsiders anyway, called 'realization.'"[36] Significance in these instances takes on a meaning and appreciation specific to a field, attesting to the need to acknowledge the specialized nature that significance may sometimes assume.

Clearly, teaching, integration, and application can contribute to their own scholarly realms. For example, a new way of teaching undergraduate calculus might serve as a model for colleagues at the same institution or beyond. A diagnostic method developed by a clinician-scholar might influence practitioners. The results of a scholar's integrative efforts might help shape public debate and broaden understanding of the issues at hand. Because the four types of scholarship dynamically interact, their contributions to each other can be traced as well. New developments in research, for instance, can contribute to ideas about teaching or application, while ideas generated in teaching, integration, or application can suggest new lines of research.

Finally, when thinking about significance, one can note works of scholarship that, through some happy combination of freshness and timing, open whole new areas for further expansion. Certainly, originality increases the potential for breaking new ground. As Oliver Sacks, a neurologist, noted, "Creativity in this sense involves the power to originate, to break away from the existing ways of looking at things. . . ."[37] Such a project may have an early and obvious impact when the timing is right, attracting an important audience, compelling

assent, or stirring debate. Breakthroughs like these are best known in the scholarship of discovery and the scholarship of application, but why should they not also occur when teaching and integrative scholarship become community property?

Effective Presentation

The contribution made by any form of scholarship relies on its presentation. Scholarship, however brilliant, lacks fulfillment without someone on the receiving end. The discovery should be made known to more than the discoverer; teaching is not teaching without students; integration makes scant contribution unless it is communicated so that people may benefit from it; and application becomes application by addressing others' needs.

The criteria used by scholarly presses and professional journals invariably refer to effective communication. Cambridge University Press simply asks, "Is the manuscript well written?"[38] The University Press of Kansas wants to know, "Is the writing style effective?"[39] The *Journal of the American Mathematical Society* says, "Papers must be written clearly," and then adds this fascinating comment: "At least the referee should be able to understand them without undue difficulty."[40] It also says that the paper must be of interest to an appropriate number of readers—not just to the authors, students, and a few colleagues—suggesting that the intended audience of scholarship should be reasonably broad. In this spirit, Kent State University Press asks, "Would there be interest in this book beyond its specialist field?"[41]

The scholarship of application, too, adheres to this standard. The National Academy Press asks, "Are sensitive policy issues treated with proper care?"[42] The Mott Foundation prefers to fund applied projects that "contain an appropriate plan for . . . reporting and dissemination."[43] And the University of Georgia says in its Guidelines for Faculty Appointment, Promotion, and Tenure that the effectiveness of public service should be judged, at least in part, on "the quality and impact of the written documents produced."[44]

The importance of presentation is readily apparent when it comes to teaching. The evaluation forms for teaching that we studied are full of such questions as "Did the instructor speak with good expression?" "Did the teacher explain course material clearly?" "Did the instructor introduce stimulating ideas?" The scholarship of teaching should lead to communication with colleagues, as well as with students. In this spirit, we agree with those colleges and universities that take as an indicator of excellence in teaching the sharing of innovative instructional materials and concepts through formal publications, conferences, and seminars, as well as through more informal means.

In reviewing a scholar's work, these questions should be asked about presentation:

- Does the scholar use a suitable style and effective organization to present his or her work?
- Does the scholar use appropriate forums for communicating work to its intended audiences?
- Does the scholar present his or her message with clarity and integrity?

Good presentation involves a sense of audience and careful attention to the best ways of reaching each of its members. The presentation of scholarship is a public act, and although some work is highly esoteric, it must ultimately be known and understood by at least the members of that special audience. Quite simply, scholars must communicate well. Teaching, for instance, should use images, metaphors, analogies, and examples that connect the subject matter to who the students are and how students learn. A teacher should also take advantage of special opportunities, what educator Parker Palmer calls "critical moments." The first day of class, the first grades awarded, confusion over a key concept, or a disagreement, all offer occasions "when a learning opportunity will either open up or shut down for your students—depending, in part, on how you respond."[45]

The scholarship of application typically calls for communication with practitioners or even public audiences who bring little specialized knowledge to the table. Effective presentation to such groups may require the scholar to learn the different communicative styles of government officials, corporate officers, for-profit laboratory researchers, documentary filmmakers, or primary and secondary school teachers and principals. This may involve media relations and learning how to present one's views in radio and television interviews or through op-ed columns and magazines of general circulation. Effective presentation under these circumstances may require the scholar to do more listening than speaking, recognizing that what the audience says is part of communication. Physicist Freeman Dyson recalls the lengthy process by which a local community was persuaded to permit its resident university to build a laboratory for recombinant DNA research. A series of hearings enabled questioners and critics to have their say and, perhaps, to influence the final outcome. As Dyson noted: "The first lesson that we learned was the importance of listening. The only effective way to dissipate distrust is for the people who are distrusted to sit down and listen to what their critics have to say."[46]

Teaching and applied scholarship can remain incomplete acts unless presentation at some point reaches beyond students, clients, or the public in order to connect with colleagues. Shulman argues that work that is valued is work that is presented to colleagues.[47] The failure to make this kind of wider connection weakens the sense of community. This happens in scholarly life when

such essential functions as professional service or teaching do not get discussed openly or often enough. It also occurs when the standards of scholarly communication are poor.

The printed page remains the most common forum by which scholarly work reaches beyond the library, laboratory, seminar room, or conference hall. Unfortunately, though, standards of writing in many academic circles are low. Jargon and obtuse prose deprive scholars of the benefit of the interplay that could result from more effective presentation. If scholars present their work in language as clear and simple as the subject allows, scholarly communication would be improved not only among colleagues but with the public as well. Patricia Nelson Limerick said:

> The redemption of the university, especially in terms of the public's appraisal of the value of research and publication, requires all the writers who have something they want to publish to ask themselves the question: Does this have to be a closed communication, shutting out all but specialists willing to fight their way through thickets of jargon? Or can this be an open communication, engaging specialists with new information and new thinking, but also offering an invitation to nonspecialists to learn from this study, to grasp its importance and, by extension, to find concrete reasons to see value in the work of the university?[48]

Scholars, as a result of technological advances, can increasingly present their work in nontraditional forms. Scholarly communication now flows through electronic networks, where standards for what to say and how to say it are closer to those for oral communication. Scholarly work is also carried by film and television, in the popular press, and even in Hollywood, where academic specialists consult on the lives and times of historical figures, the habits of dinosaurs, and the lives of scholars themselves—witness the portrayal of Robert Oppenheimer in *Fat Man and Little Boy* and the depiction of C. S. Lewis in *Shadowlands*. Museums and galleries display scholarly and creative work; dramatists and musicians from the academy perform in theaters and concert halls.

Popularization, done well, brings together the right materials creatively and helps the audience, whether they be students, clients, the public, or colleagues, appreciate the complexities and importance of the problems addressed in the particular field. In all scholarly work—including that which passes into the popular domain—evidence, analysis, interpretation, and argument should be handled carefully and honestly.

Reflective Critique

Our final standard involves the scholar thinking about his or her work, seeking the opinions of others, and learning from this process so that scholarship itself can be improved. We found little evidence that this standard figures prominently

in the evaluation of scholarship as matters now stand, although it is recognized when funding agencies insist on plans for project evaluation, and by colleges or universities that encourage professional development. Nonetheless, the following questions are important to ask:

- Does the scholar critically evaluate his or her own work?
- Does the scholar bring an appropriate breadth of evidence to his or her critique?
- Does the scholar use evaluation to improve the quality of future work?

Throughout history, the ideal of scholarship has been shadowed by the hazard of pedantry. For many, it is wisdom that makes the difference. For example, Abraham Ibn Ezra, the twelfth-century Jewish polymath, warned that "a scholar of the traditional text, who learns nothing else, is like a camel carrying a load of silk: silk and camel are of no use to each other."[49] In the nineteenth century, Ralph Waldo Emerson saw "thinking" as the scholar's true calling,[50] and in our own century C. Wright Mills referred to the "imagination" of the scholar.[51]

Reflection gives the lie to the common but unflattering characterization of scholars as narrow specialists, unable or unwilling to emerge from the depths of their subspecialties for a breath of fresh air. Biologist Barbara McClintock, for example, always urged harried young scientists, rushing on to the next experiment, to "take the time and look."[52] With proper reflection, a scholar can examine his or her project from multiple perspectives—moving more easily beyond the narrow confines within which work in the academy is sometimes observed. The aim is to summon the muses, give free play to intuition—and then take that intuition and clothe it in thought that leads to the next step in one's scholarly career.

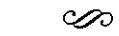
Through reflection comes creativity. This ability to invent, devise, envisage, and improvise, is the key to success in all types of scholarly work. Indeed, in his recent study *Making the Case for Professional Service,* Ernest Lynton sees creativity as the essential, and perhaps even defining, characteristic of scholarship. According to Lynton, scholarship is the "antithesis of rote and routine. . . . Scholarly work is not carrying out a recurring task according to a prescribed protocol, applying standard methodologies. What unifies the activities of a scholar, whether engaged in teaching, research, or professional service, is an approach to each task as a novel situation, a voyage of exploration into the partially unknown."[53]

The work of Donald Schön, in particular, draws attention to the extent to which effective professional practice depends not only on how tasks are approached and

problems defined but also on how work proceeds. Effective professionals think about what they are doing while they are carrying out their work. And what is true of professional work generally applies to scholarship as well. Its practice requires reflection as the project unfolds so as to adapt to changing circumstances and come to a successful solution. As Schön writes in his influential book *The Reflective Practitioner,* the professional is "open to the situation's backtalk."[54] Scholars, too, recognize and respond to whatever is unique and unexpected in carrying out their work.

Insightful reflection involves self-awareness that continues after the completion of a project. An appropriate plan of inquiry should allow for evaluation, guiding the scholar's thinking about what went right and what went wrong, what opportunities were taken, and which ones were missed. As part of the evaluation, a scholar should solicit opinions and show the ability to respond positively to criticism. Finally, a scholar might follow through with activities enabling the development of new skills or knowledge: attending a program at the institution's center for the improvement of teaching, participating in a workshop on a new research technique, taking time to familiarize oneself with a new body of literature or to design a new course.

In the end, reflective critique both promises and promotes intellectual engagement. It leads to better scholarship. Careful evaluation and constructive criticism enrich scholarly work by enabling old projects to inform new ones. It is precisely the reflection encouraged by these activities that connects separate projects and makes them integral parts of some larger intellectual quest. As the scholar turns to the next research task, the next article, the next course or consultation, older projects feed ideas to the new ones, while the new ones return the favor and enrich the range of implications of those that came before.



We conclude, then, that there is a common language in which to discuss the standards for scholarly work of all kinds, a language that enables us to see clearly what discovery, integration, application, and teaching share as scholarly activities. We acknowledge that these six standards—clear goals, adequate preparation, appropriate methods, significant results, effective presentation, and reflective critique (see Exhibit 2.1)—define phases of an intellectual process that are in reality not so neatly categorized. Still, we find value in analyzing the qualities that scholars admire in finished work, while conceding the playful, anarchic, and unpredictable aspects of the life of the mind. Confidence in the assessment of scholarship depends on using standards that are appropriate to the full range of scholarly work.

Exhibit 2.1. Summary of Standards

Clear Goals

Does the scholar state the basic purposes of his or her work clearly? Does the scholar define objectives that are realistic and achievable? Does the scholar identify important questions in the field?

Adequate Preparation

Does the scholar show an understanding of existing scholarship in the field? Does the scholar bring the necessary skills to his or her work? Does the scholar bring together the resources necessary to move the project forward?

Appropriate Methods

Does the scholar use methods appropriate to the goals? Does the scholar apply effectively the methods selected? Does the scholar modify procedures in response to changing circumstances?

Significant Results

Does the scholar achieve the goals? Does the scholar's work add consequentially to the field? Does the scholar's work open additional areas for further exploration?

Effective Presentation

Does the scholar use a suitable style and effective organization to present his or her work? Does the scholar use appropriate forums for communicating work to its intended audiences? Does the scholar present his or her message with clarity and integrity?

Reflective Critique

Does the scholar critically evaluate his or her own work? Does the scholar bring an appropriate breadth of evidence to his or her critique? Does the scholar use evaluation to improve the quality of future work?