Preparing Future Faculty to Assess Student Learning

A report on a CGS project supported by a grant from the Teagle Foundation

The Teagle Foundation

Council of Graduate Schools

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ISBN-13: 978-1-933042-31-2
ISBN-10: 1-933042-31-1

Printed in the United States

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Preface

When the Preparing Future Faculty (PFF) initiative began, there were two major concerns facing US higher education: first, that universities were not doing enough to prepare graduate students with the full range of career skills expected of faculty; second, that US institutions were paying insufficient attention to the quality of undergraduate teaching. At the graduate level, while there is still more work to be done, universities have made huge strides in developing PFF and similar programs to prepare graduate students for faculty careers, and through programs such as the Professional Science Master's to prepare graduate students for non-academic careers. At many colleges and universities, centers for teaching and learning and a host of initiatives now provide faculty with access to resources and tools that address professional development needs in teaching and learning.

Despite improvements in undergraduate education that have resulted from such reforms, public concerns about the quality of undergraduate education have resurfaced, especially around issues of assessment and accountability. Today's faculty and accredited US higher education institutions are typically required to document learning objectives and demonstrate student learning outcomes in ways that would be unfamiliar to their predecessors. As any cursory glance through the weekly headlines in the higher education press will reveal, there is an entire industry growing to meet public demands for accountability in this area. Meanwhile, there is vigorous debate, particularly among faculty, about proposed instruments and approaches that some see as overly bureaucratic, based on insufficient evidence of effectiveness, or inappropriate to field knowledge.

We believed that there was an opportunity, here, to explore how Preparing Future Faculty and other similar programs were preparing graduate students to assess student learning. We suspected that graduate institutions could play a critical role in improving undergraduate student learning, bringing benefits to graduate students and the institutions that hire new faculty, and answering public calls for accountability through proven, faculty-tested best practices in teaching and learning. This report is intended to catalyze broader, national discussions in the US graduate community as well as local, campus discussions about needs and opportunities for enhancing the professional development of graduate students aspiring to faculty careers. The immediate goal of such enhanced preparation is to produce a generation of new faculty who are better trained to assess undergraduate student learning with confidence. The longer term goal is the improved learning in American postsecondary education that would result from future generations of faculty more deeply engaged in meaningful assessment.

I hope this report will be useful to Graduate Deans, graduate school staff, and all those who are responsible for generating professional development resources for graduate students, for enhancing faculty development programs and resources, or for overseeing institutional learning assessment efforts. I also hope that this report may provide the basis for conversations between administrators, faculty, and students about creating vital models for the development and exchange of best practices in approaches to learning assessment.

From our perspective, this report represents the conclusion of a first, exploratory step in a new direction to enhance and expand professional development programs, nationwide, that provide tomorrow's faculty with the skills to assess undergraduate (and graduate) student learning.

Debra W. Stewart
President

Acknowledgments

The success of a project on faculty teaching and student learning depends on the support of a broad range of experts and advocates. For their material and intellectual contributions to this study, the authors would like to thank the Teagle Foundation, particularly Donna Heiland, Teagle Vice-President, and Program Officer Cheryl Ching, who both provided inspiring ideas and comments at various stages. We are also grateful to David Bell, Karen DePauw, Sally Francis, Chris Golde, George Kuh, Laura Rosenthal, Debra Stewart, and Jo Rae Wright for their helpful comments on earlier versions of this manuscript, and to the committed graduate students, deans, and assessment experts who participated in the 2010 workshop, "Preparing Future Faculty to Assess Student Learning" (see the CGS website, *www.cgsnet.org*, for the agenda and participant list). We also thank all those graduate deans and staff who devoted their time to responding to a survey on professional development programs that informed this publication and the workshop. For assistance with survey design and data analysis, we thank CGS staff, Sheila Kirby, Scott Naftel, and Jeff Allum, and we thank Josh Mahler for his assistance with the workshop, publication design, and project website.

Executive Summary

The assessment of student learning is one of the most important responsibilities in U.S. higher education. Faculty are expected to assess student learning and use those results to make improvements in the classroom and in the educational environment, yet few faculty have expertise or receive formal training in learning assessment methods. The Council of Graduate Schools (CGS) recognized an opportunity to address this need through a network of existing professional development programs for graduate students aspiring to faculty positions. CGS developed an exploratory project with funding from the Teagle Foundation to understand current trends and challenges in this area and identify future directions for a new program to prepare the next generation of faculty and university leaders with skills and expertise in learning assessment.

This report provides a broad overview of national needs in the assessment of student learning and gaps in existing future faculty preparation programs.

Chapters One and Two discuss student learning assessment in the context of national discussions about higher education quality and accountability, with an emphasis on some of the tensions surrounding the assessment issue and on challenges in achieving the genuine faculty engagement on which rigorous learning assessment depends.

Chapter Three discusses the key role that Graduate Schools can play by bringing multiple stakeholders together to ensure that improved assessment practices result in both greater accountability and enhanced teaching and learning environments in US higher education.

Chapter Four discusses the Preparing Future Faculty program as a model for the professional development of graduate students and highlights key findings from a CGS survey of existing US programs that illustrate challenges and opportunities for program enhancement.

The report concludes with a synthesis of a far-ranging discussion of opportunities, challenges, and next steps at a national workshop hosted by CGS November 22, 2010 in Washington, DC. The workshop brought together assessment experts, senior leaders in graduate education, and students from universities with model professional development programs for graduate students aspiring to faculty careers. The broader purpose of this exploratory project was to identify the optimal elements that would shape a broad, national initiative to encourage systematic integration of assessment skills and expertise into future faculty preparation programs. Such an initiative has been called for by national education leaders (e.g., Hutchings, 2010), and is here envisioned as a key strategy for shaping future teachers, scholars, and leaders across the US higher education system.

1. Introduction

Student learning is now a key focus in national discussions about the quality of higher education. Calls for greater public accountability and, specifically, for more compelling evidence that students are learning are coming simultaneously from a number of different groups: the federal government, regional accrediting bodies, state governing boards, and the higher education community itself. As a result, higher education faculty across different institutional contexts must devote a significant amount of time to assessing student learning in ways that are unfamiliar to them from their graduate training or past experience.

One example of such an expectation of faculty and their institutions is the development of "student learning outcomes," that is, explicit statements of generic skills and abilities and disciplinary competencies that a student is expected to have acquired as a result of successfully completing a course, a coordinated set of core courses, or other activities including co-curricular experiences. This is commonly required at both undergraduate and graduate levels. These expectations can help faculty to evaluate the level of student learning and engagement, and develop a better sense of how a particular course or activity fits into the overall educational mission of the institution. Such requirements can encourage faculty to reflect on their scholarly responsibilities beyond research, as teachers, and to experiment with new teaching approaches to enhance learning inside their classrooms. They can also be used to enhance the activities of all those working to provide a rich learning environment at their institution, whether as mentors, lab and program directors, or administrators.

Enhanced assessment of student learning has great potential to increase the public trust in our higher education institutions and result in long-term improvements in teaching and learning. As these new requirements are currently being defined, communicated, and implemented, however, a chasm is emerging between stakeholders outside the institutions calling for greater accountability and practicing faculty within them who are responsible for the day-to-day activity of teaching and student learning. Faculty sometimes perceive these requirements as bureaucratic exercises to appease accreditation agencies and public accountability champions rather than as opportunities to improve the quality of teaching and learning. If universities want the public accountability movements to be effective, they cannot afford to alienate those who will create, apply, and hopefully learn from these measures in their own classrooms. It is important, then, to identify strategies for increasing current faculty engagement in these discussions (Hutchings, 2010). One of the most promising long-term strategies for creating a faculty and institutional culture that values assessment is to begin work now to engage the next generation of future faculty who will soon inherit the responsibility of educating undergraduate and graduate students (ibid.).

Background

Under the leadership of the Council of Graduate Schools and the Association of American Colleges and Universities, in collaboration with US graduate schools and 11 disciplinary societies, the Preparing Future Faculty (PFF) program grew into a nationally recognized initiative for addressing the professional development needs of future higher education faculty. From 1993-2003, with supporting funds from the Pew Charitable Trusts, the

National Science Foundation, and the Atlantic Philanthropies, hundreds of US colleges and universities from across the higher education sector worked together to develop pilot professional development programs for doctoral students aspiring to faculty careers. National coordination provided a framework for graduate deans, faculty, and disciplinary society leaders to exchange best practices and ideas on issues such as sustainability, collaboration strategies, structure and curricular content. During this period, CGS worked with US graduate deans to advance the notion that the PhD should represent not only preparation for research but broader professional development for academic and non-academic careers through national meetings, presentations, publications, and the PFF National Office. And CGS engaged a wide range of stakeholders in national dialogue about strategic directions for PFF to help ensure that these programs continued to prepare participating graduate students with the skills that would be valued of faculty in the future.

Since the end of the grant period in 2003, similar programs have sprung up at a number of universities around the country while others have been discontinued. Meanwhile, many of the original programs have evolved relatively independently of one another to prepare at least a small portion of the nation's graduate students for faculty careers.

The end of grant funding for PFF has meant that a powerful network for improving the quality of US higher education in many ways lies dormant. The Council of Graduate Schools and the Teagle Foundation recognized the potential for renewing this national network of PFF programs and expanding that network to include other programs with a similar purpose, such as the Teagle-funded programs to integrate learning assessment skills into graduate student teaching in the arts and sciences. We believe that a broadened and revitalized network of future faculty programs will provide one of the most effective means of addressing the vital national need for faculty who are better equipped to assess student learning and participate in their institutions' decisions about assessment that have broader implications for their students, programs, and colleges or universities.

The Current Project

This report, *Preparing Future Faculty to Assess Student Learning*, describes an exploratory project by CGS, funded by the Teagle Foundation, to investigate the potential of PFF and similar programs to prepare graduate students for their future responsibilities to engage in thoughtful assessment of student learning. The report discusses the following topics:

- The importance of learning in the context of current discussions of higher education quality and accountability;
- Outcomes assessment in the history of US graduate education and graduate reform initiatives;
- The development of the Preparing Future Faculty initiative, characteristics of active PFF programs, and gaps in our current knowledge and practice that call for transformed practice in PFF;
- Opportunities for integrating enhanced understanding and skills in assessing student learning into PFF and similar programs.

Included in the discussion are key results from a 2010 survey conducted by CGS to better understand the scope and nature of university activities in two areas: the professional development of graduate students and faculty/graduate student preparation in learning assessment. Those results suggest the need for better understanding of how assessment is integrated into PFF programs, more evidence about effective strategies for higher education learning assessment, and better communication between institutions about best practices in learning assessment and programmatic integration of assessment skills into professional development programs. We conclude with a summary of results from a Fall 2010 workshop designed to stimulate discussion about the key challenges and opportunities for enhancing programs to prepare graduate students for faculty careers.

The stakes in national discussions of these issues are high. A loss of public confidence in the ability or willingness of our institutions to communicate their impact on student learning could have broader consequences. In the long-term, such a loss of confidence could weaken the historically close relationship between US universities and the American public. One possible solution for increasing public accountability is greater federal oversight: as Tennessee Senator Lamar Alexander recently warned, "if colleges and universities do not accept more responsibility for assessment and accountability, the federal government will do it for them" (Alexander, 2007). Many in the higher education community fear that federal oversight could actually compromise rather than improve quality at many US higher education institutions.

An alternative solution is that universities take a more proactive role in voluntary assessment and accountability. Universities should embrace a more proactive role, here, not only out of a reaction to fears of federal oversight, but also out of a genuine interest in quality improvement. Indeed, surging public interest in student learning at US institutions of higher education should be welcomed as providing colleges and universities with an historic opportunity to improve quality while at the same time strengthening the compact between the American public and American universities.

This exploratory project addresses this opportunity by facilitating discussion between experts in the assessment of student learning and graduate education leaders from universities across the country with a demonstrated commitment to the professional development of graduate students. When PFF programs first began, there was strong interest in the improvement of teaching, but universities had not yet developed structured programs to address the professionalization of future faculty. We are now at a newly challenging stage where such Preparing Future Faculty program structures exist but there is little understanding or dialogue around best practices in the assessment of student learning within those structured programs. Our aim is to identify what would be needed nationally to advance promising practices and identify strong models for preparing future faculty to actively participate in the assessment of student learning.

2. The National Context: Learning, Quality, and Accountability in Higher Education

In assessment circles, it is common to say that, while we should aspire to measure what we value, too often we end up valuing what we measure. In other words, we come to define our standards by what is easiest to collect and quantify. Achieving the ideal of "measuring what we value" is complicated, however, by the fact that this "we" is made up of different communities that hold different perspectives on what would constitute valuable educational outcomes. These differences help to explain some of the variation in approaches to higher education quality assessment. The values, or interests, of various stakeholders in higher education might be reflected in input and outcomes measures such as the following:[1]

- **Students and parents** typically value the private goods of enrichment, knowledge, and employability, and ask questions such as: *Is the school I am considering widely regarded as able to provide a high quality education? Will my child (or will I) earn a good job upon graduation?*
- **Government stakeholders and the public** typically value a return on public investments in colleges and universities, and ask: *Are our colleges and universities efficiently producing a skilled workforce in sufficient numbers? Do these investments result in a net increase in jobs, tax revenue, security, economic competitiveness, and social well being?*
- **Educational institutions**, especially public colleges and universities, must of course take into consideration the outcomes valued by stakeholders both within and beyond their campuses, and ask additional questions such as: *Are we enabling students to satisfy their educational and career goals in line with our public or private mission? And are we able to excel among universities of the same size and type? Are we contributing to the production of an educated population worthy of a democratic society?*

Large-scale measurement enterprises have developed around such important questions, and while each set of questions may require a different set of metrics, the combined data can contribute to an overall picture of educational quality. Influential surveys and longitudinal data sets, for example, have helped multiple stakeholders begin to answer their questions in ways that can serve to promote both greater transparency about returns on public and private investment and improvements in higher education. A burgeoning number of for-profit companies have also recently emerged to provide "data solutions" to help institutions collect and analyze relevant information (Hutchings, 2009).

Such activities have grown in response to increased requirements by regional accrediting bodies discussed later in this report. Also fueling this growth has been a competition among different notions about "quality" in our higher education degree programs and institutions. Such notions are expressed in a range of metrics, including: admit ratios and undergraduate grade point averages of admitted students, degree completion rates and average time to degree, rates of employment and salaries after graduation, and reputational evaluations by peer faculty and alumni satisfaction results. These kinds of metrics can facilitate intra-institutional comparisons (between programs and of single programs at different points in time) as well as inter-institutional comparisons.

But even when the metrics for comparison are easily quantifiable, such as degree completion rates achieving agreement on how to use such metrics to assess quality has been no small task in the United States where the higher education system is among the most varied and decentralized in the world (see Benjamin and Chun, 2003). The variety of institutions and missions in the US has great advantages, such as the access and opportunity students have at every level of socio-economic status and academic background to further their education in pursuit of a full range of personal and professional/vocational goals. This variety, however, also means that metrics for measuring quality as defined by one type of institution and mission (to be a national exemplar in engaging students in research and scholarship, for example) may look very different from metrics of quality as defined by another type with a very different mission (such as to serve the community and provide access to all eligible students).

Where the metrics are not easily quantifiable, the challenges of achieving consensus on how to use the respective data to enhance quality within the academic community are magnified. US higher education institutions have made great progress over the last decade on developing a data infrastructure to track output measures such as degree completion and time to degree. The "elephant in the room" in discussions of accountability and national assessments of quality in higher education, however, has long been student learning. Learning may be one of the few core areas many would agree upon as the common denominator by which quality in education should be measured. And yet, as many have noted, it has been among the least well-defined and least operationalized concepts in calls for improvement in higher education (Adelman 2010; Banta 2007; Shavelson and Huang 2003; Chun 2002). Methods for directly measuring student learning include: locally prepared tests, standardized tests, course papers, presentations, performances, portfolios, and other means that demonstrate what the student is able to produce. When inter-institutional comparisons have been made, however, the quality of learning has typically been inferred in national assessment efforts primarily through indirection and "proxies" (Chun 2002). Data collected to facilitate comparative institutional evaluation and benchmarking have rarely included direct evidence of learning (see Kuh, 2010)[2]. This is true whether we are speaking about the national college rankings and ratings that drive so many students' choices of where to apply, in longitudinal data sets that inform education policy, or in alumni and employer surveys used for various purposes.

Educators, assessment experts, accrediting bodies, and policymakers are now asking of institutions questions faculty have typically asked in the classroom: what, how, and how much are students learning?

In recent years, however, discussions of higher education quality and accountability have turned the national spotlight toward the quality and systematic assessment of student learning at all degree levels.[3] Educators, assessment experts, accrediting bodies, and policymakers are now asking of institutions questions that faculty have typically asked in the classroom: what, how, and how much are students learning?

Understandably perhaps, many faculty have pushed back and expressed concerns that, as professional teachers and experts in their fields, they are the best people to ask and answer

such questions in the context of the classroom.[4] The risk of focusing on measures such as degree completion and time to degree as "proxies" for quality learning, as expressed by critics of such an approach, is that faculty may feel pressured to compromise on quality in their evaluation of student work and focus instead on student progress through the system, regardless of student performance.[5] Similarly, the risk of adopting common learning assessment instruments across dissimilar institutions and disciplines, it is feared, is that faculty may be pressured to "teach to the test" in ways that would compromise academic freedom and undermine teaching and learning (Shavelson and Huang, 2003). The ultimate concern here may be that rather than "measuring what we value" we (the faculty) will come to value what we (the assessment experts) measure, and what is easily measurable may not be what is most valuable about higher education.

To say that "not all faculty are on board," as one CGS survey respondent phrased it, may be an understatement. Expressed in the 45 responses to a Sept. 7, 2010 article by David Glenn in *The Chronicle of Higher Education* titled "Assessment Projects from Hell," faculty resentment at what is perceived to be the bureaucratization of US higher education is strong.[6] Faculty responses to the article voice concerns about a range of issues, including: increased paperwork, threats to academic freedom and faculty autonomy, and the need to adopt what they perceive as fashionable assessment "jargon" and embrace reforms before they have been empirically proven effective. Some faculty also fear that if standards for content and teaching are defined from outside the institution, department, or classroom, they will result in nothing more than a legitimization of compulsory mediocrity in US higher education curricula (see Fritzschler, 2010).

Without serious faculty engagement and input into the discussions shaping the future metrics by which quality learning in higher education will be measured, ownership of the problem and its resolution will be claimed by a limited set of stakeholders.[7] In taking these responsibilities on for themselves, administrative bodies within the institution (and other organizations contracted by it to help meet the new burdens of documentation) could jeopardize the capacity of senior leaders, learning experts, and faculty to leverage improvement in the classroom or attract the requisite respect and attention of their faculty peers. Under one increasingly plausible scenario, a culture of *learning assessment for accountability* could arise that would be conducted by expert administrative units to meet the requirements of regional accrediting bodies, state governing boards, etc., but which is almost entirely divorced from the day-to-day practice of faculty (see Banta 2007). [This is not the direction accrediting agencies would like to see, nor is it the direction that is likely to result in the most meaningful improvements.]

At the same time, mechanisms to *use learning assessment to improve teaching* may indeed already be in place, though those efforts currently are mostly conducted by individual faculty members on an ad hoc basis. One could imagine a scenario in which institutional "assessment for accountability" could come to perform what might be called a "ceremonial" function of demonstrating to the public that "learning" is taking place, while the real assessment of learning and any best practice exchange that such assessment might foster would go undocumented. On the surface, it might seem that the advantage of such a scenario is a certain degree of efficiency. Faculty who already feel overwhelmed by a range of scholarly responsibilities may feel relieved to know that others are handling the accountability paperwork. The disadvantage is a lost opportunity to take advantage of public

interest in the quality of learning to better document and therefore more broadly replicate what the country's best faculty are finding to be the best practices in teaching, i.e. those most conducive to learning in different contexts across US classrooms and institutions.

In responding to calls for action, especially in developing institutional responses to such calls, there are challenges and risks as well as opportunities. We must steer the course carefully on these issues or we risk jeopardizing faculty engagement with overly bureaucratic paperwork or, even worse, devaluing real teaching by calling on quality teachers and institutions to meet prematurely defined minimal standards. Organizations such as the Teagle Foundation, the Lumina Foundation, the Carnegie Corporation of New York, the Carnegie Foundation for the Advancement of Teaching, and the Spencer Foundation have led important efforts to chart the course wisely. One of the greatest challenges in all of these efforts has been engaging faculty from across the disciplines in discussions about how best to articulate and meet the new expectations. The projects sponsored by these organizations have recognized that meaningful assessment of student learning must be defined from the "bottom up" by faculty and actively teaching scholars in the disciplines in close dialogue with assessment experts rather than from the "top down" by government officials. In a recent report for the National Institute of Learning Outcomes Assessment, Pat Hutchings (2010) recognizes this need and recommends "Build[ing] Assessment into the Preparation of Graduate Students" as one of six key strategies for obtaining greater faculty engagement: "Weaving assessment into courses and experiences designed to prepare beginning scholars for their future work as educators is a promising step forward, with long-term benefits as today's graduate students become tomorrow's faculty members and campus leaders" (ibid.).[8]

There is an important role for government, regional accrediting bodies, and state boards to play in setting clear expectations for public accountability and transparency in higher education about learning outcomes. Assessment experts too have a key role to play, especially in identifying promising strategies and techniques for assessing student learning. But the success of all these efforts depends upon the vital engagement of faculty and of graduate students aspiring to faculty positions. Graduate schools and graduate deans are key figures in making such engagement happen. Graduate deans have oversight responsibility in two arenas. First, at institutions where graduate teaching assistants serve as instructors of record, graduate schools can ensure that the assistants understand core principles and methods for assessing student learning and using the results to improve teaching. Secondly, at institutions where PFF or other programs are in existence, graduate deans play a role in ensuring that students who aspire to become faculty are prepared for their future assessment responsibilities in all of their responsibilities: in teaching, service, and research supervision.

To explore how senior administrators and faculty might best work together to provide the next generation of faculty with the assessment skills they need requires better understanding of the key opportunities and challenges, as well as the institutional context for the new assessment requirements facing faculty and institutions. The following sections provide some of this background information through a discussion of: the institutional context for outcomes assessment, the Preparing Future Faculty model and current institutional programs, and the experiences of leaders at those institutions in integrating learning assessment into faculty and future faculty preparation activities.

3. The Institutional Context: The Assessment of Student Learning and the Graduate School Mission

The following section describes the institutional context for the assessment of student learning, including: the purposes of learning assessment; some definitions and typical approaches; and the institutional requirements for regional accreditation in the US. This section concludes with a discussion of the important roles that graduate deans and Graduate Schools have to play in advancing the assessment of learning through academic program review, benchmarking activities, and professional development programs for graduate students aspiring to faculty positions.

Student Learning Outcomes

A quality college or university education requires a well-planned curriculum and goals which aim to meet specific "student learning outcomes." In the US, there are two levels of student learning outcomes that are typically required at the undergraduate level (Huba and Freed, 2000). First there are outcomes related to general education courses. Such courses have the dual goals of (a) developing specific proficiencies such as writing, communication, mathematics, critical thinking, foreign language, etc., and (b) exposing students to a range of disciplines that will broaden their understanding of such areas as fine arts, humanities, cultures and civilizations, social and behavioral sciences, natural sciences, and health and well-being. General education is designed to prepare students to become well-rounded citizens and serve as a platform for advanced knowledge in their "major" or chosen field of study.[9] At the second level, undergraduate students are expected to develop a thorough understanding of the field or discipline in which they major. This understanding often includes the history of the field, its theory, its methodology, and its application. Here, students also develop a set of skills or abilities that may be specific to that field or may have broader application.

Similarly, at the graduate level there are also two levels of student learning outcomes. While there generally are not common general education or core courses at the graduate level, there are individual foundational concepts and skills that are taught throughout the curriculum. They may include oral and written communication, critical evaluation, research methodology, research ethics, and professional ethics. The second level of graduate learning outcomes is specific to the discipline and encompasses content relating to the field of study. These outcomes may differ significantly by field or discipline.

Assessment

Attainment of student learning outcomes is evaluated by a process known as "assessment." Although there are other kinds of quality assessment in higher education, learning assessment has been defined as the systematic collection, review, and use of information about student learning in order to inform decisions about how to improve teaching and learning (Palomba and Banta, 1999; Walvoord, 2004). Assessment in this sense developed as a type of action research intended neither to collect data for external stakeholders nor to

grade a student's performance but rather to inform improvements in the curriculum and the delivery of information. It can be used to measure student learning of disciplinary content as well as critical thinking, scientific reasoning, or other skills.

The purposes of assessment are to describe what the student should know and be able to do (student learning outcomes) and show evidence that documents their attainment of these abilities (Anderson, et al., 2005). Assessment can rely on objective measures as well as on informed professional judgments. Ideally, assessment is an ongoing cycle that consists of 1) establishing institutional and departmental goals for student learning, 2) operationalizing the goals into measurable expected outcomes of student learning, 3) providing sufficient opportunities to achieve those outcomes, 4) gathering data on how well students achieve the outcomes, 5) analyzing and interpreting the evidence that has been collected, 6) using the evidence to make changes that will improve student learning, and 7) evaluating the effectiveness of the assessment process itself (Walvoord, 2004; Suskie, 2009). The cycle should reoccur each year and is expected to result in changes that will make a positive impact on the quality of the educational program. It is clear that without broad and active involvement of faculty, however, the assessment of student learning outcomes will be weak and tangential (Bers 2008; Grindley et al. 2010).

There are three approaches to assessing general education learning goals (Palomba and Banta, 1999). The first is an individual course-based approach that encourages faculty to embed their own assessments in the courses they teach. The second is a multi-course or theme-based approach that is used across courses and across a college. The third is a non-course approach designed by those who teach in related disciplines within and across colleges. Ultimately it is possible to use all three or combinations of these approaches.

Integrating evidence across different sections of courses or among different courses is facilitated by the use of "rubrics."[10] A rubric is a guide to scoring that provides a task description, the evaluation criteria to be used, levels of the task required for success, and a scale for evaluation. Rubrics make scoring more consistent and allow comparisons across different learning situations (Suskie 2009; Allen & Knight 2009; Stevens and Levi 2005).

The evidence to be collected in assessment consists of both direct measures and indirect measures. Direct measures are those that are based on tangible examples of student work or thinking. They might include standardized tests, locally developed tests, portfolios, papers, projects, presentations, and other original work. Indirect measures are proxy signs that learning has occurred. They might include course grades, graduation rates, admission rates into graduate programs, placement rates of graduates, satisfaction surveys, student engagement data,[11] alumni perceptions, and employer surveys. Final course grades are considered indirect measures because they provide an overall view but do not measure explicit student learning outcomes. Grading within courses can become a part of direct assessment by examining specific results of key assignments and aggregating student learning results across sections and courses (Suskie, 2009).

Assessment is a fruitless operation unless faculty use the results to examine where improvements are possible in teaching and curriculum design.

Assessment is a fruitless operation unless faculty use the results to examine where improvements are possible in teaching and curriculum design. As with collection of any data set, assessment results can be performed by using tallies, percentages, aggregates, averages and qualitative summaries. It is helpful to make comparisons using benchmarks based on local standards, external standards, best practice or value-added contributions (Suskie, 2009). With this information at hand, faculty can come together and examine strengths, weaknesses, and trends. They can then determine where changes are needed and can implement those changes.

Learning Outcomes and Regional Accreditation

Accrediting bodies have turned their attention to the need for strong assessment programs within universities. In 2001, in an article entitled *Accreditation and Student Learning Outcomes: A Point of Departure*, the Council for Higher Education argued that it is important for the accrediting bodies to take a more active role in encouraging assessment through student learning outcomes (Ewell, 2001). The Council for Higher Education Accreditation (CHEA) in its 2003 *Statement of Mutual Responsibilities for Student Learning Outcomes* urged the use of student learning outcomes to improve higher education (Council for Higher Education Accreditation, 2003). The six regional accrediting agencies[12] that are responsible for evaluating universities in the US have similarly focused much attention on assessment. With the changes to the Higher Education Act in 1992, these bodies were mandated by the federal government to pursue student learning outcomes in their accreditation requirement (Business-Higher Education Forum, 2004). The Higher Learning Commission of the North Central Association, as an example, has created the Institute on Assessment of Student Learning for institutions that seek instruction in how to improve assessment processes (2010); standard 14 of the Middle States Commission on Higher Education requires that assessment of student learning demonstrate student achievement of appropriate "knowledge, skills, and competencies"; and the New England Association of Schools and Colleges (NEASC), Commission on Institutions of Higher Education includes detailed guidance on multiple methods of appropriate assessment.[13]

The number-one reason for follow ups by nearly every regional accrediting body last year was a deficiency in student learning outcomes assessment.

The number-one reason for follow-ups by nearly every regional accrediting body last year was a deficiency in student learning outcomes assessment.[14] Institutions have engaged in a range of strategies for meeting the assessment requirements of accreditation bodies, a number of which are "bottom up" efforts to develop institutionally comparable student learning outcomes in general education, in the disciplines, and in community colleges.[15]

These activities have great potential to assist colleges and universities in addressing the new requirements in ways that ultimately result in improved student learning. In addition to the

regional accreditors, other accrediting bodies also require similar documentation of student learning assessment. The professional and specialized bodies that accredit individual programs within universities have also shown commitments to focusing upon student learning outcomes (Palomba and Banta, 2001).

As has been pointed out in the 2010 NILOA paper on the topic of regional accreditation and student learning outcomes, accrediting bodies may provide guidelines for student learning outcomes, but they do not provide a solution for meeting these requirements in the classrooms where they may (or may not be) implemented. The paper's author, Staci Provezis observes: "Despite calling for faculty involvement, all regional accreditation standards are weak in respect to assuring such involvement" (2010, p. 13). In the section below, we discuss several potential ways in which the current roles of graduate deans and graduate schools may help to address this concern.

Learning Assessment and the Graduate School Mission

The mission of the Graduate School is to oversee the overall quality of graduate programs. As noted by several graduate deans at a workshop described in Chapter 5, below, this mission places the graduate school at the intersection of public accountability and continued internal program improvements. Three areas in particular make the Graduate School an essential partner in any future efforts to address the professional preparation of future faculty in the area of student learning assessment:

(1) **academic program review**, where the Graduate School plays a key role in coordination and/or oversight;
(2) **the institutional adoption of benchmarking tools and practices**, where graduate deans provide important leadership in monitoring national developments and international trends as well as identifying opportunities and instruments; and
(3) **professional development**, where the Graduate School has historically played an important role in administering and overseeing strong graduate student programs such as PFF.

(1) Academic Program Review

One of the key levers for continued improvement in higher education is academic program review, i.e., the evaluation of departmental programs for the purpose of continuous quality improvement. Program review considers many inputs including application rates, selectivity, yield rates, applicant grades and admission scores, curricula, and faculty teaching. Since the quality of a program depends in part upon how well the program is achieving its goals, academic program review must also consider program outcomes. Assessment designed to measure student learning outcomes therefore should be a part of the program review process. Many universities incorporate a report on student learning outcomes as part of their program review evaluations.

Graduate deans have an important role to play in the academic program review process. Because they have a leadership and/or support role on the graduate council or other faculty governance body, they typically coordinate the review process for graduate programs. This

involves providing guidelines for a program's self-study, arranging for external reviewers, coordinating the logistics for the reviewers visit, obtaining a final report, engaging in a dialogue with the department regarding that report, and sharing the report and recommendations with the academic leadership. At universities where graduate teaching assistants are an integral part of undergraduate instruction, graduate deans may also participate in the review of undergraduate programs. In some cases, graduate deans may be responsible for coordination of a combined review of both graduate and undergraduate programs within an academic unit or interdisciplinary area.

Graduate schools can help to ensure that the assessment of academic programs transcends the evaluation of specific courses and that programs are meeting goals and assessments that go well beyond the goals of those courses. Effective curricula are evaluated not only by what is contributed by individual courses but also by how they complement each other (Cuevas et al., 2010). Academic program review helps the graduate school with its mission to determine if the collective goals have been met.

(2) Monitoring the Adoption of Benchmarking Tools and Practices

In today's post-Spellings climate, it may not be sufficient to rely solely on internal goals and metrics for improvement nor to rely solely on external data for accountability purposes. External benchmarking measures have been developed to permit comparisons within and between universities for undergraduate learning. Tests such as the Collegiate Assessment of Academic Proficiency (CAAP), the Measure of Academic Proficiency and Progress (MAPP), the College Basic Academic Subjects Examination (CBASE) and the Collegiate Learning Assessment (CLA) are examples of instruments that may provide such evidence (Ewell, 2007).[16] Colleges and universities may also consider developing internally-based, but cross-referenced performance tasks that permit institutional comparisons. Sharing the results of such standardized tests and assessment metrics as well as student learning outcomes with the public may be an expectation in the near future, and accrediting bodies may move to make more information about the results of their reviews transparent to the public (CHEA, 2009). In this environment, faculty and senior university leaders should be active now in deciding which assessment instruments work and which fall short in adequately assessing the student learning outcomes that they have defined for higher education at their institution. If they do not play an active role in these decisions and related discussions, it is possible that decisions about which instruments should be adopted and how they should be used will be made for them by external stakeholders.

These efforts reflect a growing interest in assessment for improvement, but also assessment for accountability. The US is not alone, and not necessarily the leader, in requiring greater accountability of its higher education institutions. In Europe the Bologna Process attempts, through systems of external examiners, to align subject standards across institutions and also to move toward greater accountability. In service of these efforts to harmonize degree structures in Europe, the "Tuning Project" was developed to establish common frameworks for what students should know and what abilities they should have as a result of achieving bachelor's, master's, and doctoral degrees across European universities (Adelman, 2008). This project has been influential upon efforts led by the Lumina Foundation to

define similar qualifications for US degrees. Work on bachelor's degrees has begun, and preliminary work to explore such qualifications for master's degrees is now underway. A key ingredient in the success of such an approach will be the involvement of faculty in the disciplines from multiple institutions in discussions and decisions about how to define such qualifications. As participants in this project note, Graduate Schools can serve an important role in brokering such faculty discussions, which also have implications for graduate student professional development.

(3) Professional Development

Integrating learning assessment into professional development programs for future faculty can help quell tensions between those who view improvement efforts to be an internal matter and those who advocate for a more formal and external approach to accountability. The trends discussed in this paper all point to a need to prepare future faculty to take a leadership role in developing learning assessment systems and a learning assessment culture. A CGS survey of PFF programs (see next section) found that students preparing to become faculty members have not yet taken sides in the debates between those who support assessment and those who see it as nothing more than another bureaucratic demand from senior leadership. Students appear open to developing skills in learning assessment and to documenting results. Providing students in a more structured way with such knowledge and skills relating to assessment, and exchanging best practices in such preparation across and between institutions, could energize a new cohort of faculty to take on their responsibilities in this evolving arena.

If the history of PFF is an indication of future possibilities, such a structured professional development program strengthened by national discussion of the topic will require the leadership of the graduate community. With unique responsibilities for overseeing the quality and review of academic programs across disciplines and a responsibility to monitor national benchmarking practices, graduate deans have a lead role to play in the shaping of the professional development of graduate students. What such professional development programs look like, and how these programs might be enhanced, is the topic of the next section.

4. The Preparing Future Faculty Initiative: A Review of Past Efforts, Current Challenges and Future Opportunities

Universities have been engaged for decades in serious reflection on the quality of learning in higher education through a number of successful national reform initiatives.[17] In response to influential national reports such as the 1991 COSEPUP report, *Reshaping the Graduate Education of Scientists and Engineers,* for example, and a series of widely publicized critiques of the quality of US undergraduate education that emerged around the same time, many universities turned inward to reflect on how they could better improve the quality of graduate students' preparation for faculty careers and enhance the quality of undergraduate education. Some of the most successful institutional responses were made possible by national "best practice" initiatives focused on enhancing graduate education. These initiatives included the highly successful *Preparing Future Faculty* program, sponsored by the Council of Graduate Schools in collaboration with the Association of American Colleges and Universities. This project began premised on the idea that enhancing the quality of graduate education required better preparation of doctoral students for their professional future responsibilities and greater dialogue between institutions.

The Preparing Future Faculty (PFF) model sprang from a decades-old realization that faculty members need to be better prepared for their multiple roles in academe. Across the US, PFF programs prepared doctoral students in a strategic and comprehensive way for the full range of roles and responsibilities of US higher education faculty.[18] Between 1993 and 2003, the PFF initiative evolved to award 76 grants to 44 doctoral universities that partnered, collectively, with nearly 300 other higher education institutions, and 11 disciplinary societies; thousands of students have participated in PFF programs, many of whom are now teaching in tenured and tenure-track positions.

Many of these programs include some training in the assessment of student learning in post-secondary education. By participating in PFF programs, graduate students learn about teaching styles and pedagogy (including pedagogical issues germane to their disciplines), how to design a course curriculum, as well as how expectations and priorities for teaching, research, and service may vary depending on institutional context and mission. By meeting the broader professional development needs of graduate students aspiring to faculty positions, the PFF initiative advances one of the broader goals of improving the quality of graduate education in the US.

Another driver behind the PFF initiative is a broadly shared interest in improving the quality of undergraduate education. By preparing doctoral students (during the grant period and, in subsequent years), master's students, and postdoctoral scholars for the full range of faculty roles and responsibilities for the diverse expectations of US higher education institutions, participating universities contribute to the quality and systemic improvement of the entire US higher education enterprise. Graduate schools and graduate deans played a strong leadership role in this improvement. A large-scale external evaluation of the PFF

initiative found that the most successful programs were those in which: graduate schools coordinated and provided broad student access to professional development in the general knowledge, skills, and competencies required of successful faculty; partner institutions shaped experiences for participants specific to their institutional contexts; and participating programs or departments provided discipline-specific curricular content and experiences.[19]

Preparing Future Faculty: A Model Professional Development Program?

PFF programs go far beyond TA-training programs in scope and content. One innovative design feature that, during the grant-funded phases, made PFF programs different from traditional TA-training programs, for example, involved institutional collaborations. Research universities in PFF programs were originally required to partner in "clusters" with liberal arts colleges, master's-focused universities, community colleges, and minority-serving institutions. PFF participants in programs with institutional collaborations often had opportunities to observe and experience faculty responsibilities at a variety of academic institutions with varying missions, diverse student bodies, and different expectations for faculty. Through these collaborations, students participated in supervised teaching and other professional development experiences, and received exposure to higher education environments often dissimilar to their own doctorate-granting institution. In many cases, students reported that these experiences helped students identify their own career preferences and provided them with knowledge and experience that proved advantageous on the job market.

Since 2003, CGS has run the PFF National Office, which provides a central clearinghouse for information about PFF and contact information for campus PFF programs. The results of model PFF programs are documented on a dedicated website (www.preparing-faculty.org) maintained by CGS, through CGS-hosted workshops, deans' dialogues, and plenary sessions, and in a series of best practice publications.[20] Since the end of the grant period, PFF programs have continued to evolve and thrive, and many universities have developed similar professional development programs on the PFF model, often in consultation with CGS.[21] Some of these programs have expanded their partnerships; some have scaled back student travel while maintaining institutional collaborations; and others now focus on enhancing the on-campus curricula, and have scaled back institutional collaborations altogether (see next section for results of a CGS survey). Many of these programs have evolved to encompass additional professional development areas such as: using technology in the classroom, ethical issues in research and academia, financial management, and university governance. The successful PFF model has been widely emulated beyond the US as well: for example in the UK and Japan, in consultation with US universities and the CGS PFF National Office.

PFF programs today provide the most comprehensive and recognizable models for preparing graduate students who aspire to teaching careers. In this climate of accountability they afford a unique opportunity to embed assessment knowledge and skills into their programs. They provide a means to channel training in assessment to the upcoming cohort of new faculty, and yet these programs have not been fully utilized to enhance the assessment of student learning in higher education. While assessment

experts, policy makers, and foundations have been publicly deliberating about what to do about student learning assessment on a national scale, some of these programs have already been quietly doing it by providing numbers of graduate students with expertise and practice in learning assessment.

Various models have been developed by some of these innovative PFF programs, but their effectiveness has not yet been studied. Promising practices and a growing body of evidence about what works in the assessment of learning and in the professional preparation of future faculty to assess student learning may well be developing at universities and in clusters where such programs exist. And because senior university leaders have typically not been involved in monitoring and institutionalizing such cases, they have not been a part of a national dialogue about best practices in graduate student preparation for faculty careers or in learning assessment, generally.

What Do We Know about Current Practice in "PFF" Programs and Student Learning Outcomes?

Preparing Future Faculty programs would seem to provide an ideal opportunity for introducing graduate students to the institutional expectations for learning assessment, skills and techniques in assessment, and to the broader issues about how and why student learning should be assessed and how results of that assessment can be used to improve teaching and the curricula. CGS sought to better understand the extent to which preparation in the assessment of student learning may already be integrated into PFF programs and to identify opportunities for enhanced integration. We therefore designed a survey that queried universities on the status and scope of their PFF programs, ways in which those programs have evolved, the degree of institutional collaboration, and other issues. Separately, we asked within the same survey about what university resources and activities were available to help faculty with student learning outcomes assessment and whether such resources and skills preparation were available to graduate students aspiring to faculty positions.

We sent the survey to 57 universities, including every university that received a PFF grant or that requested a similar program to be listed on the PFF National Office website, as well as other universities with professional development programs at least partly coordinated by the graduate school or with sustained involvement in assessment. We sent the survey to graduate deans to oversee responses, but asked for input on the survey from project directors, staff, and campus experts who would be able to provide accurate responses to both areas of inquiry. We received 37 completed surveys (a 65% response rate), and two e-mail responses from institutions indicating that their PFF activities are no longer active. The great majority of respondents (78%) reported that, over the past decade, requirements for faculty at their university in the assessment of student learning increased. Only 14% reported that such requirements stayed about the same, and none reported a decrease in such requirements. We sought to learn whether or not, in response to this trend, the development of student learning outcomes was currently integrated into structured professional development programs for graduate students aspiring faculty positions. If the survey demonstrated that such integration was already in place, we also sought to use the survey to gather information about opportunities for enhancing such integration and for

making current promising practices a part of the national dialogue.

Survey results shed light on opportunities to meet national and institutional needs discussed earlier in this paper. Some key opportunities and needs identified in survey results are discussed below. Many of these findings point toward the value of PFF as a delivery model for the professional development of graduate students in undergraduate learning assessment. But results also point to specific needs: to reach more students within universities with active PFF and similar programs; to foster greater dialogue between universities about how to integrate learning assessment into professional development programs for tomorrow's faculty in ways that are scalable, sustainable, and effective; and to create more opportunities for dialogue within and across universities about best practices in the disciplines as were fostered during the Preparing Future Faculty initiative.

Opportunities and Needs

1. Many programs developed with seed money from the PFF initiative remain "Active" or "Somewhat Active."

The majority of respondent institutions (76%) described their PFF or PFF-like programs as currently "Active," which we defined as: "continue to maintain an active professional development program with institutional partnerships and supervised teaching experiences and/or certificate/transcript recognition for student participation in a range of activities." An additional 22% described their program as "Somewhat Active," i.e. operating under "scaled back resources and/or activities" institutional partnerships, etc. since the original grant-funded period. Only 3% of those that returned completed surveys described their PFF or similar programs as "Inactive." [Results reported below include responses from institutions reporting on both "active" and "inactive" programs.]

2. Graduate Schools provide strong support for PFF and similar programs.

Early grant phases supported the development and institutionalization of predominantly centralized PFF programs, which were housed in the Graduate School or in some other central unit with graduate school input or oversight. During the latter grant phases, new PFF programs were developed in the graduate programs and departments (often run in combination with centralized PFF activities or programs). The majority of institutions surveyed (59%) described their programs as "centralized," defined as "open to graduate students from across the campus, focusing on issues that pertain to multiple fields and programs," and 35% described theirs as "hybrid," that is, containing both centralized and program-specific components. By contrast, only 5% described their PFF activities as "program-specific," defined as "housed in the departments or programs, including emphasis on issues specific to the field or program." Three quarters (75%) of those respondents who described their "centralized or hybrid [programs] with centralized components" reported their programs to be housed in the Graduate School or Graduate College. The status of PFF programs suggests the potential for strong leadership from graduate deans and graduate schools to influence the priorities and activities of professional development programs in positive ways in the area of learning assessment.

3. Graduate deans and other senior administrators are leading calls, and institutional responses to calls, for accountability in the area of learning assessment.

Presented with a variety of possible factors contributing to increased university requirements for student learning outcomes, 100% of respondents reported that "Strategic commitment of senior administration to improve quality of education" were either very important or somewhat important in prompting such increased requirements, and 96% reported that both "Institutional/regional accreditation standards" and "Specialized or programmatic accreditation" were very or somewhat important in prompting increased requirements for faculty assessment of student learning outcomes. The leadership of graduate deans in working with faculty to meet these requirements and the place of Graduate Schools at the intersection of graduate student professional development and public accountability make the case for stronger Graduate School involvement in the current national dialogue surrounding enhanced learning assessment.

4. Institutional collaboration appears to play a smaller role now than in the grant-funded period of PFF programs.

As mentioned above, one of the features that distinguished grant-funded PFF programs from typical TA-training programs is that participants in the former experience supervised teaching and service mentoring on other campuses via formalized institutional partnerships. Typically, a PhD granting PFF university partnered in "clusters" with at least one master's focused institution or liberal arts college and at least one community college, on average involving between 3 and 6 other institutions (and as many as 15 institutions) per cluster. Sustainability concerns, travel time, and incentives for partner institution faculty had been identified in the past as challenges, and survey results suggest that the numbers of institutional partnerships may have decreased. Despite the number of respondents that described their programs as "Active" above, and the emphasis on institutional collaboration in the definition of "Active," results from a separate question on institutional partnerships reflect that just over one third have what they would describe as active partnerships with either master's focused institutions or community colleges. Respondents reported "current institutional collaborations" with the following types of higher education institutions as part of their PFF programs: master's-focused/comprehensive universities (35%); liberal arts/four-year colleges (41%); community colleges (35%); minority-serving institutions or predominantly-minority institutions (21%); and other research/doctoral universities (19%).

5. The majority of PFF programs are providing at least some graduate students with preparation in student learning assessment.

Over half (68%) of respondents reported that "the development of Student Learning Outcomes (SLOs) and/or the assessment of student learning" is "an integral feature" of [their] PFF or similar programs. Methods that PFF programs exposed participants to included: classroom assessment techniques, use of technology to improve student learning, use of feedback from peer or mentor observation to improve teaching and learning, and use of learning assessment data to enhance syllabi or curricula; 86% of respondents reported that students in their PFF programs learned about "Development of Student Learning Outcomes for individual courses."

These promising activities have not been documented, nor have they been cited in most discussions of the need for greater accountability in higher education learning assessment. These findings suggest that there is a huge opportunity to tap existing PFF programs to explore what approaches are being used to expose graduate students to learning assessment, how well students learn from these programs, and how such efforts might be enhanced to impact the institutional climate surrounding assessment and accountability. One clear opportunity in any revitalized PFF network suggested by these results would include the documentation of current practices, and the creation of a centralized repository of information about such approaches. Moreover, as suggested by participants at a CGS-hosted workshop described in the next chapter, this preparation of graduate students in PFF programs could potentially yield models to engage and enhance professional development activities for current faculty.

6. Respondents report that faculty receive minimal preparation for student learning assessment through mostly passive print materials and one-time orientation events.

While the CGS survey found that at least some graduate students in PFF programs receive intentional exposure to student learning assessment issues and techniques, when asked how faculty typically learn about Student Learning Outcomes, respondents reported a variety of modes: university-wide handbooks (54%) , program-specific handbooks (41%), and new faculty orientation or workshops (49%); 38% reported that faculty learn about this kind of assessment from other "Resources provided to faculty by the graduate school and/or college dean" and 30% reported that an office of institutional research provided this exposure.

Several respondents cited centers of excellence in teaching and learning, where individual faculty members who request assistance may receive it. Overall, these findings are difficult to interpret. On the one hand, they suggest that, as faculty development may not be under the explicit purview of the graduate school, a revitalized PFF initiative bringing faculty, disciplinary societies, and graduate students together under the aegis of graduate school-led campus-wide programs could answer a need for greater faculty engagement. Most faculty are not introduced in a systematic way to learning assessment as faculty, and most of the existing mechanisms for engaging faculty in this kind of assessment is in orientation through either a passive/static (handbook) format or orientation event without a chance for meaningful reflection and formative input, follow-up, or sustained dialogue with experts.

Summary

Overall, the CGS survey identified graduate schools as playing key roles in responding to calls for accountability and shaping accountability and assessment plans, as well as in supporting professional development programs for graduate students, the majority of which integrate aspects of student learning assessment. The potential of these programs to serve broader needs for greater faculty engagement in learning assessment and enhanced national discussion about best practices in faculty preparation is high, but, as the next section indicates, will require significant coordinated efforts and re-envisioning to ensure that key obstacles of institutionalization and scale-up are overcome.

Active institutional collaborations during the grant-funded phases of PFF provided some of the richest opportunities for PFF programs to address differences in learning assessment expectations by institutional type. While most respondents described their programs as "Active," generally it is clear that many have scaled back the scope of their current institutional collaborations since the original PFF seed grants, when external grant funding supported travel, supervised teaching experiences, etc. PFF participants seek academic employment at a range of higher education institutions, and to the extent that graduate students seek and obtain academic employment at a variety of different institutional types, and such differences may have implications for how learning assessment is conducted in the classroom and in the institution, this may by an unaddressed need. This finding also may suggest, however, that PFF has evolved to address these needs in ways that do not require the sustained physical time on partnering campuses that was an integral part of the PFF model during the grant funded period.

Key Challenges

Universities face a number of obstacles in preparing graduate students to understand and conduct assessments. Any concerted effort to address the needs of future faculty in regard to the assessment of student learning must be designed with such challenges in mind.

1. Faculty Resistance

Many survey respondents highlighted an obstacle discussed earlier, faculty resistance to assessment. About one-third indicated that most faculty do not currently see preparation in the assessment of student learning as appropriate to a graduate degree program, and several stated that negative attitudes about (or lack of interest in) student learning outcomes are passed on from advisors to graduate students. It is important to keep in mind, however, that the respondents of this survey consisted largely of graduate deans and administrators of professional development programs. A number of respondents indicated that the perceived faculty resistance reflects certain values or beliefs, often expressed in the view that assessment is grounded in common sense rather on learned skills, or that "teaching does not require systematic training."

Yet many respondents also indicated that faculty resistance does not necessarily reflect disagreement with the potential of assessment to improve teaching and learning. Over one-half of survey takers who identified faculty resistance as a key challenge pointed to broader factors that inhibit greater faculty interest in, or commitment to, assessment efforts. These factors include:

- Insufficient time to address assessment
- Greater pressure to perform in other professional areas (i.e. research)
- A lack of knowledge or training in assessment strategies
- Unclear professional expectations regarding assessment responsibilities and few incentives to perform well in this area
- Weak support for assessment within academic programs
- A lack of discipline-specific instruments

It is important to note that not all of these concerns may be evenly distributed across fields (and some may vary by institution). Several respondents indicated that assessment is given different weight within different disciplines, and one respondent stated that the humanities and liberal arts face greater hurdles due to a perception on the part of some faculty that learning outcomes in these fields defy measurement.

2. Student Engagement

The general nature of some responses suggests that the obstacles listed above could apply both to current faculty and future faculty, i.e., graduate students. On the whole, however, fewer respondents indicated that graduate students expressed strong resistance to assessment, and a number of survey-takers characterized students as more open to this activity than current faculty. One survey-taker opined that the tightening academic job market would likely spark increasing interest among future faculty in assessment practices: "As the job market continues to tighten, we predict that more and more students will see the value of developing and documenting assessment skills, as such skills give them an edge in landing a faculty job."

How might universities respond to growing student openness and interest? Survey responses indicated that they will need to take into consideration the developmental trajectories of new and future faculty. It was reported that assessment may be put on the "back-burner" as students work to balance different professional responsibilities at the same time: "For doctoral students, a key challenge is balancing the multiple expectations from their program, their major professors, and their desire to learn more about teaching and an academic career," one survey taker noted. Another stated that this balancing act may continue into a student's first faculty appointment as he or she works to master the responsibilities of teaching and learning assessment, scholarship and research, and service or outreach. The time issue was considered to be of particular concern for students supported by grants since they may not receive "release time" or encouragement from faculty advisors to focus on teaching and assessment.

These responses highlight one of the key advantages of early and gradual exposure to learning assessment. If new faculty are introduced to assessment when they land their first jobs, they may be more likely to experience this responsibility as an additional burden that is disconnected from the professional identity and practices they have developed in graduate school. If, however, they have prior understanding of the concepts and importance and have the opportunity to develop and practice this skill, they may have a much more positive and engaged response.

3. Pedagogical Issues

One pedagogical challenge identified by survey takers was that of teaching future faculty to think of outcomes in a broad context—not just in the framework of a particular course. One respondent noted that assessment encompasses a much broader range of outcomes for programs and curricula of which individual courses are only a part. Yet another indicated that minimal exposure leaves graduate students uncertain about how their teaching responsibilities for individual courses contribute to the broader formation of

undergraduates within a certain major: "It is challenging for graduate students, who often have limited TA or teaching opportunities, to gain perspective on the breadth of student learning outcomes defined not only as short-term knowledge (from a course), but also more broadly as long-term, accumulated knowledge, skills, attitudes, abilities and habits of mind from a program of study."

Additional challenges involved linking assessment to student learning. A number of responses highlighted the need to focus more on outcomes that demonstrated evidence of learning rather than on teaching methodologies alone. Introducing graduate students to criterion-referenced assessments, rather than on the easier to implement, norm-based assessments often used in large survey courses was also perceived to be a challenge. Norm-referenced assessments are used to compare the performance of large groups of students on an examination that is not directly tied to a particular course or curriculum, while criterion-based assessment is used to measure student performance in relation to a set of explicit skills and concepts. Both forms of assessment are valid in different contexts, but it is important for future faculty to understand that these assessments serve different purposes. If, out of a lack of familiarity with criterion-based assessment, assessment itself is equated with required norm-based evaluations used by institutions, then there is a danger that young faculty will see assessment as a practice that is not relevant to their particular courses or programs and in which they have no direct role to play.

4. Operational Challenges

The most frequently cited operational challenge to preparing future faculty to assess student learning was a lack of centralized or equally-accessible resources. Particular concerns were:

- Variations in training and standards within disciplines and programs;
- A lack of centralized university support for, or integration, of assessment; and
- A lack of resources and programs with cross-disciplinary breadth.

In many ways these responses supported other concerns about the need to ensure that all future faculty are given systematic training in teaching and that they are provided with a broad context for assessment, not only the context provided through a specific course or program. One respondent added that disciplinary norms may restrict thinking about assessment, even if, as another noted, there is a need for more discipline-specific tools for measuring outcomes.

Other operational challenges identified in the survey were:

- Contradictory requirements from university-wide assessment efforts required by accreditors and the assessment efforts instituted by programs
- Over-mechanization of assessment efforts
- Lack of models/examples of effective, assessment-driven reforms
- A need for more financial and human resources

Where Do We Need to Go Next? Incorporating the Assessment of Student Learning into Professional Development Programs

As was clear in the responses to our question about challenges, graduate deans and the Directors of PFF and similar programs are already working to confront obstacles surrounding assessment and the teaching of assessment. To gain a better sense of how professional development programs for graduate students might play a role in overcoming these challenges, we included an additional open-ended response question on the survey: "In your opinion, how could professional development programs for graduate students aspiring to faculty careers best be modified, enhanced, or utilized to incorporate participants' training in the assessment of student learning and the development of Student Learning Outcomes?"

1. Approaches to Integrating Assessment Training

Survey-takers provided experience-based suggestions for making this topic more central, with varying degrees of emphasis on the need for formalized training. Many respondents provided more specific suggestions for integration: one-half of the responses focusing on integration recommended dedicating special sessions, workshops, courses or events to Student Learning Outcomes (SLOs); roughly one-third recommended requiring and/or giving credit for courses in professional development or curricula for teaching certificates; and one-third recommended involving faculty advisors and mentors in training initiatives.

A handful of other responses highlighted a number of other strategies for integrating assessment training within and beyond PFF programs:

- Inviting guest speakers involved in accreditation and faculty development to present at PFF or other professional development events
- Requiring students to incorporate SLOs in their present teaching responsibilities
- Incorporating scholarship of teaching and learning methodologies in training programs
- Training the trainers of teaching programs in the vocabulary/value of assessment
- Linking TA training to faculty development workshops on assessment
- Developing online resources, including discipline-specific resources to all graduate students

Some of the ideas offered above have already been incorporated into existing programs, while others were presented as possible innovations.

2. Modeling Innovations

The modeling of assessment was a topic that repeatedly emerged in comments on faculty mentoring. These comments might call to mind a situation in which a faculty advisor leads a workshop on assessment, encourages a student to participate in that workshop, or reviews a student's syllabus with feedback about incorporating SLOs. Survey takers shared a number of other innovations in modeling that could potentially help students to play a more direct

role in the creation and assessment of learning outcomes. Several respondents pointed out that professional development programs and other graduate courses are an excellent opportunity for making the medium the message.

One respondent wrote,

"In the [professional development] programs I currently offer […] I use an activity/competency checklist based on the objectives that the participants should achieve before they complete the program. They may utilize alternate ways of attaining the program objectives, but they are aware that they will be evaluated based on their achievement of the expected competencies. The rationale for this type of competency-based learning and evaluation is explained and participants are expected to try this model in their own teaching. To assist in this endeavor, when I review the syllabi that the participants prepare to teach in their own classes, I emphasize the need for stating specific measurable objectives right at the beginning of the course so that the students will be aware of their intended learning outcomes. I also demonstrate to future faculty that end of course assessment is made much simpler because they can develop questions based on stated objectives and students will become aware of their own learning outcomes."

In this approach, students are given the opportunity to simultaneously experience the roles of teacher and student in the learning assessment process, making the value of assessment to learning more tangible and real.

Yet another set of responses recommended involving graduate students in the process of creating SLOs for their own graduate programs. This practice might also have additional positive effects, demonstrating that faculty have an important role to play in the creation or implementation of SLOs (beyond plugging in standards handed down to them) and showing that learning outcomes concepts are applicable to all levels of learning (and not just ways of enforcing minimum standards of attainment).

3. Management Strategies

Of course, all of the recommendations above require support on the part of graduate deans and other senior administrators working to ensure that professional development programs are effective and relevant and provided by faculty or staff well-trained in learning assessment. A number of respondents emphasized that the graduate school plays a key role in providing adequate funding, staffing, and follow-up for programs that prepare future faculty to understand and use learning outcomes assessments.

A number of specific strategies for this support were also suggested:

<u>For current graduate students and future faculty:</u>

- Make teaching experience a requirement for all graduate students
- Include questions about assessment in surveys of doctoral students to gauge need in this area
- Provide stipends for top graduate student teachers to build their expertise in this area

For current faculty:

- Include consideration of a faculty member's integration of the Scholarship of Teaching and Learning in the tenure and promotion review process
- Create opportunities to highlight effective practices of the newest faculty members who can provide models and serve as "change agents"

These suggestions are not comprehensive, nor will they be practical at every institution, but they can serve as a platform for future discussion about the ways in which graduate deans can work to create a positive culture of assessment that supports the activities of all those involved in the professional development of future faculty: graduate students seeking to develop their teaching skills, faculty advisors overseeing their professional development, and Directors of PFF and similar programs.

Summary

The results of the CGS survey described above suggest that PFF programs hold promise as sites of significant intervention into the quality of faculty practice in the assessment of student learning. There is potential for graduate deans and graduate schools to build on work already underway in professional development for graduate students and academic program review to assume greater leadership in discussions of institutional accountability. While graduate deans' primary responsibility is the quality of graduate education, since the PFF was created, graduate schools have recognized the key role graduate students play as future faculty in the quality of undergraduate education. PFF and similar programs with graduate school oversight and/or coordination is one important means of answering the national calls for greater accountability in the assessment of undergraduate student learning and improved quality in higher education. The activities that these programs support provide the kind of rich engagement of future faculty that, nationally, we should be seeking for all faculty.

This project has helped us to understand that most PFF programs expose participating graduate students to learning assessment, but that these programs currently reach small numbers of students, and significant challenges impede the scale-up, broader impact, and disciplinary relevance of these programs, and dialogue between senior university leadership and faculty is largely limited to internal campus discussions. Survey respondents and workshop participants indentified obstacles to progress on key issues such as incentivizing participation of sufficient numbers of students and providing sufficient engagement in the disciplines to make a difference in faculty attitudes toward assessment and accountability.

The close collaboration between departments or programs, disciplinary societies, and graduate schools under the leadership of graduate deans in the latter phases of the Preparing Future Faculty programs suggests that a revitalized national PFF initiative may be the most effective means of answering the core needs. External evaluators of the PFF program identified this hybrid model as the most effective structure for PFF in ensuring "visibility, credibility, and institutionalization" and recommended that future PFF activity build on this optimal collaboration between graduate schools and departments or programs (Goldsmith et al., 2004).[22] Because such a hybrid structure builds in input

from and collaboration with program faculty in the curricula, a renewed and expanded PFF initiative building on this structure could result in promising new resources and a change of attitudes toward learning assessment and accountability. The resources and training models that result could also potentially answer the need for more professional development opportunities for current faculty.

In the absence of a national, coordinating body to convene stakeholders and participants, PFF programs face a number of challenges: confusion about how methods for assessing student learning may vary by course, program/discipline, and institution; a paucity of forums to support a vibrant cross-institutional conversation about promising practices in the assessment of student learning; and missed opportunities for institutional collaboration, where aspiring faculty may have opportunities to understand how the institutional context of the higher education sector in which they seek careers may reflect unique expectations and student needs. As discussed in this report, many of the features of the CGS-sponsored Preparing Future Faculty initiative could help institutions address such challenges. The review of the national and institutional contexts described above, and the results of the CGS survey of active PFF programs suggest that a new nationally coordinated set of pilot projects could provide a significant bridge between national calls for greater accountability and current faculty practice in the assessment of student learning.

5. Insights, Lessons Learned, and Areas of Future Work: a CGS Workshop on Enhancing Graduate Student Professional Development Programs

At a November 2010 workshop "Preparing Future Faculty to Assess Student Learning," participants probed the observations and issues gleaned from the survey described in chapter four. Workshop invitees included faculty and national experts in learning assessment, graduate deans and program directors with active Preparing Future Faculty (PFF) and similar programs, and current and recent graduate students who had participated in faculty preparation programs with an assessment component.[23] The purpose of the workshop was to identify opportunities and challenges for enhancing the preparation of future faculty to assess student learning.

A discussion paper provided background, preliminary analysis of survey findings (revised in earlier chapters of this volume), and a framework for the workshop discussion. The workshop began with presentations on broad trends and issues in higher education assessment from three national experts. George Kuh, co-Director of the National Institute for Learning Outcomes Assessment, helped to frame discussion by providing an overview of the national context for learning assessment. Dr. Kuh described a variety of data sources and tools, but emphasized that choosing among these requires clear understanding of what we value. This presentation was followed by a panel addressing current research on the most effective approaches to assessment. Marc Chun, Director of Education at Collegiate Learning Assessment at the Council on Aid to Education described a variety of methods and approaches for assessing undergraduate learning, while Ann Austin, Professor of Higher, Adult, and Lifelong Education at Michigan State University, discussed strategies for creating a faculty culture that values assessment.

Following the three framing talks, each workshop participant presented on topics in which they had particular interest, experience, and expertise. (See 'Appendix B' for the full workshop agenda). Presentations and discussion focused on issues in four areas:

- Creating a Culture that Values Learning Assessment
- The Broad Parameters of an Enhanced PFF Program
- Potential Curricular Content for Learning Assessment in PFF
- Assessing Success in Program Integration

The goal of the workshop was not to establish consensus on particular approaches to learning assessment where, as prior chapters discuss, there is now lively debate, but rather to identify promising models and structures for enhancing graduate students' familiarity with different approaches and skills in learning assessment. A large part of the discussion focused on issues of how to create effective programs that have the capacity, over the long term, to transform the broader culture of graduate education and faculty preparation. This chapter synthesizes the results of workshop presentations and the all-group discussions that followed. The results provide a valuable framework for future enhancements and expansion

to PFF and similar programs and a compelling case for a more strategic, national approach to meeting graduate student needs for professional development in learning assessment.

Challenges to Creating a Culture that Values Assessment of Student Learning

> *"The new faculty coming into the institutions are the great hope for cultural transformation."*
>
> *- Dr. Eduardo Ochoa, U.S. Asst. Secretary for Postsecondary Education*

As discussed earlier, preparing future faculty with appropriate expertise in the assessment of learning is an important strategy for fostering university cultures that value assessment. At the workshop, Dr. Eduardo Ochoa, US Assistant Secretary for Postsecondary Education, emphasized the key role of current graduate students in supporting the current and future quality of higher education in the United States.: "Bringing [assessment] into the preparation of future faculty is critical. The new faculty coming into the institutions are the great hope for cultural transformation."

Workshop participants explored specific obstacles and opportunities in effecting such a transformation. Some of the cited obstacles were specific to certain types of institutions, while others were more universal. Three dominant challenges emerged from the discussion:

(1) A complex and often confusing assessment landscape,
(2) Different disciplinary cultures, and
(3) A gap between assessment scholarship and faculty practice.

(1) A Complex Assessment Landscape

Participants highlighted a number of factors that make the assessment landscape difficult to navigate for both graduate deans and faculty: real or perceived tensions between assessment efforts that stress accountability and those that stress improvement; lags between collecting and reporting data; a relative lack of attention to how such data might be used to improve learning; and uncertainty about what the data might show.

Valid questions and concerns about assessment have led to caution within some sectors of the academic community when certain assessment approaches have been recommended or adopted. These concerns typically cluster around issues such as: a) how assessment data will be used, and whether they will be used at all; b) whether an assessment activity will be used to compare the performance of individual faculty members, departments, and/or institutions; and c) whether assessment data, once provided, will have a real impact on the quality of courses and programs. Deans reported that while it is important to answer such questions in a clear and coherent way, it is often difficult to reconcile the pressures of external accountability efforts with faculty concerns, and that they have sometimes served as translators or "honest brokers" for two groups that speak different languages about student assessment.

There was general agreement that universities must be clear and effective in addressing questions about how assessment data will be used if they are to stimulate genuine faculty engagement in the assessment process. It was clear from discussion, however,

that differences in institutional context may require different communication strategies. While some participants described institutional contexts already supportive of enhanced learning assessment and spoke of the challenges of scaling up and integrating promising practices at their institutions, others described cultures where more discussion is needed of fundamental questions, such as "What is quantified and quantifiable?" They also said that broader support for assessment may depend on gathering and sharing more evidence that evidence-driven teaching reforms have been effective.

(2) Different Disciplinary Cultures

One of the reasons that a faculty culture of assessment at an institution typically does not take shape of its own accord is that many faculty view their disciplines as their primary context for scholarship, and different disciplines may define and practice learning assessment in different ways. Faculty members may be more likely to see the relevance of learning assessment to their own work when its importance is framed within the context of the discipline, rather than the institution. And yet, faculty members often encounter requirements and models for learning outcomes assessment presented in the broader, institutional context. This suggests that, while learning assessment is an institutional responsibility, disciplinary societies may be important partners in fostering the identification and exchange of promising practices among faculty.

An awareness of disciplinary cultures can also help university leaders shape effective messages about the value of assessment. A dean at a university with a strong focus on STEM fields and professional degrees commented, "My university is populated with very pragmatic data-driven people […] in a way that makes doing evaluation and assessment more straightforward because they're very open to using data to inform practice." While leaders at her university can effectively appeal to this openness to outcomes data, she explained, they must also not forget that the purposes of the data collection process must be transparent and focused on clear goals: "faculty are not very interested in collecting data if it's seen as bean counting or [mere] accountability."

As universities move forward with new solutions to the challenges of assessment, it will be important for graduate deans to have strategies for navigating these differences in institutional and disciplinary cultures. As mentioned above, the collaboration between graduate schools and disciplinary societies in the latter grant-funded phases of PFF suggest a model upon which new directions could build, since the disciplinary societies can help to promote the value of learning assessment in the disciplines and encourage more discussion about promising practices. Graduate schools, meanwhile, can address the key obstacles to effective institutionalization such as devising appropriate incentive structures, allocating resources, evaluating programs, encouraging diffusion of best practices across programs, and ensuring that campus accountability efforts build upon (rather than merely compete with) genuine learning assessment practices and principles in the disciplines.

(3) A Gap between Assessment Scholarship and Faculty Practice

The growing body of scholarship devoted to teaching and learning in higher education, along with the growing number of tools, rubrics, and templates developed for widespread use,

present both a challenge and an opportunity to universities. Some faculty have drawn from this body of resources in developing their teaching practice in very effective and measurable ways. As Dr. Austin observed at the workshop, online resources can strengthen and support an emerging culture of assessment because faculty members can use them on their own to pursue questions that they identify as important in their teaching and their students' learning, as well as issues important within institutional dynamics and requirements.

Most participants agreed, however, that most faculty are not aware of the many tools now available or under development. One dean described this problem as one of bringing the "outside" world of assessment scholarship into the "inside" world of teaching and learning. Assessment resources can also enhance the position of faculty as "stewards" of the discipline: assessment can support their efforts to advance the discipline and form the next generation of scholars.[24] He emphasized that faculty will have more influence on the quality of scholarship in their discipline if they are better able to analyze their own success as teachers.

Opportunities for Effecting Culture Change

To gain a more concrete sense of the work that could be done to stimulate more engagement of current and future faculty in assessment, we asked workshop participants to consider what types of incentives and rewards would encourage greater faculty engagement in student learning assessment and to foster greater exchange of promising practices. Suggestions and recommendations were varied, but fell roughly into the five following approaches:

(1) Link Assessment to Research and Scholarship;
(2) Use Data to Demonstrate the Impact of Assessment;
(3) Create Opportunities for Faculty Ownership and Leadership;
(4) Develop and Improve Incentives for Faculty and Student Involvement; and
(5) Connect Assessment to Professional Success.

Responses focused on both current and future faculty members, and many participants emphasized that effective change will depend on engagement of both groups.

(1) Link Assessment to Research and Scholarship

Many participants indicated that faculty may be more open to assessment and pedagogical reflection if these processes are presented in the context of intellectual and scholarly work. This point supports one of the recommendations made by Pat Hutchings in her recent paper on faculty involvement in assessment: that universities must "reframe the work of assessment as scholarship" (Hutchings, p. 15). Relevant concepts cited by participants, several of them used in the Scholarship of Teaching and Learning, include "teaching as research"; teaching scholarship; applied research; theory-based practice; and evidence-based practice. Many of the PFF programs represented at the workshop already integrate these concepts into their curricula.

Demonstrating that assessment may be a form of scholarly inquiry may also help spark more

campus conversations about how faculty may already be practicing assessment in ways that can be expanded and refined. This may be particularly important for current faculty who may not find assessment relevant to their established teaching practices, but also to graduate students who lack confidence in their teaching skills. David Payne, Vice President and COO at Educational Testing Service (ETS) observed, "[...] Graduate students really need to appreciate that the skills they're acquiring in research and scholarship can also be directly applied to assessment: asking the right questions, looking at a variety of approaches."[25]

As many participants pointed out, disinterest in or resistance to assessment may also be rooted in traditional ways of thinking about teaching and learning. Some may hold the view, for example, that teaching and research are distinct activities, or, as mentioned above, that evaluation criteria serve primarily to judge students' work rather than to improve it.

Experts in student outcomes assessment indicated that change is difficult in this area. Along with a number of graduate deans, they stressed the importance of closely examining the language and concepts that are used to describe teaching roles and pedagogical practice on their campuses. This examination may be most fruitful if both university leaders and faculty are engaged in the discussions. Some proposed shifts in concepts and language, with descriptions that emerged from the discussions, are outlined below:

What shifts are needed in the way we talk about teaching?

Traditional Concepts	Concepts Based on Scholarship of Teaching and Learning
"Teaching" Teaching practice is developed independently of learning outcomes.	*"Teaching & Learning"* Practice and outcomes are mutually informing.
Teaching vs. Research/Scholarship Teaching and research are independent (and competing) activities.	*Teaching as Research/Scholarship* Research informs teaching, and teaching is an object of research.

Assessment is Implicit and Summative
• Evaluation criteria may be vague or implicit.
• Course goals are focused on content with little attention to broader skills.
• The context for evaluation is singular (the course).
• Evaluation criteria are not typically shared or compared among colleagues.
• Faculty member evaluates students.
	Assessment is Explicit and Formative
	• Evaluation criteria are explicitly articulated and communicated.
	• Course goals are related to objectives and skills specific to the program/degree.
	• Multiple contexts for evaluation (course, program, institution).
	• Faculty share evaluation criteria articulated in teaching materials, print or online.
	• Faculty member evaluates students and
	  ○ Student acquires tools for evaluating his/her work.
	  ○ Faculty member evaluates teaching effectiveness and refines practice.

One dean noted that a focus on teaching and learning is a means of reaching the goal of accountability. She advised that university leaders should focus on "producing the best students you can" and that "the accountability will follow." This comment reflects a view expressed by many— that assessment is not an end in itself but a means of improving the overall quality of higher education.

(2) Use Data to Demonstrate the Impact of Assessment to Graduate Faculty

"Show [graduate faculty] that you're using the data, but more importantly that the university is better because you used it."

-Graduate Dean workshop participant

A key step toward connecting assessment to improvement is demonstrating this relationship with data. Some participants expressed concern that this step is left out of university assessment initiatives, as when data are processed by an institutional research or assessment office that does not communicate with faculty. One dean stressed the importance of making graduate faculty aware of the impact of assessment data: "Show [graduate faculty] that you're using the data, but more importantly that the university is better because you used it." She added that it is difficult to improve learning outcomes for undergraduate students if graduate faculty do not take seriously the preparation of future faculty to conduct and use assessments of student learning.

(3) Create Opportunities for Faculty Ownership and Leadership

Earlier sections of this paper highlighted a tension in current learning assessment practices: the core purpose of assessment is the improvement of teaching and learning, yet faculty may view the particular assessment approaches being endorsed for adoption as disconnected from their professional values and practices. According to many deans and experts, one way to respond to this problem is to create new opportunities for faculty ownership of assessment. Specific recommendations that applied to current faculty members included:

- Promoting the recognition that assessment is a faculty governance issue, i.e., through faculty governance boards or other forums;
- Facilitating faculty access to assessment tools, which can make the process of assessment more transparent;
- Giving faculty members opportunities to share their own effective assessment strategies and experiences with other faculty members.

Faculty leadership in this area will depend on opportunities to apply and share knowledge and expertise in different contexts and to integrate this expertise into their own professional practice, as mentors, advisors and teachers. Many of the PFF and other professional development programs represented at the workshop have developed new strategies in this area. [See Appendix A for more information about current projects that focus attention on graduate student leadership in assessment, in particular, Columbia University's "Teagle Teaching Scholars Program: Transforming the Way that Doctoral Students are Trained to Teach," Stanford University's "Graduate Student Teaching in the Foreign Literatures," and Northwestern University's "Northwestern Initiative for Teaching and Learning by Graduate Students."]

(4) Develop and Improve Incentives for Faculty and Student Involvement

Many incentives for faculty involvement in assessment are intangible, such as observing greater understanding of course objectives in one's students and a stronger motivation to achieve them, or being able to pinpoint less effective teaching methods and make adjustments accordingly. Unfortunately, these incentives are not effective drivers in circumstances where faculty lack the time, resources, training, or experience to take on new assessment strategies. Many participants indicated that universities should explore ways to reward faculty for their commitments to strong assessment practices with more concrete incentives. Three potential structures were mentioned:

- Competitions and grants that reward either students or faculty for integration of assessment into courses;
- Structures of professional advancement that reward faculty participation in assessment, i.e. promotion and tenure (also cited in survey); and
- For graduate students, transcript notations or certificate programs that validate assessment experience and expertise.

For more information about current programs that are developing and testing certificates that recognize graduate student preparation in assessment, see the Teagle-funded projects described in Appendix A: "Cornell University Graduate Teaching Certificate Initiative" and "Graduate Student Teaching Certificate at UC Berkeley: Developing a Workshop and Course Module on How Students Learn."

(5) Connect Assessment Skills to Professional Success

Many workshop participants lent further weight to an observation made by respondents to the survey discussed in the previous chapter: that there is increasing evidence to suggest that the academic job market already values assessment expertise. Both graduate deans and students reported that participation in PFF programs, or completion of a Graduate Teaching Certificate, already provide students with an "edge" in the job market. As assessment continues to be recognized as a growing area of teaching practice and responsibility, the market value of assessment experience may grow, providing incentives to both future faculty and to their advisors to seek professional development in this area.

The potential for culture change in this area may be two-directional, as much the result of future faculty demonstrating their ability to participate in university accountability efforts as of increasing demands for assessment expertise on the part of faculty search committees. One dean gave an example of a campus activity that has given graduate students greater influence in this area, a workshop that encourages students to demonstrate their assessment skills in their teaching portfolios and job interviews.

Finally, many graduate deans indicated that it would be useful to improve tracking of job placement, experiences and career outcomes of PhD students, especially those aspiring to a faculty career. The following types of data and their potential uses were cited:

- Placement records of students who have completed PFF and certificate programs to further support anecdotal evidence on their role in helping students get faculty positions.
- Experiences of students who receive academic placements: are they prepared for assessment responsibilities?
- Career trajectories (academic and non-academic) to better understand the needs of graduate students served by professional development programs.

The Broad Parameters of an Enhanced PFF Program

By bringing together views from the graduate school and the classroom, the workshop made it possible to think in broad terms about the structures that might best support the preparation of faculty to assess student learning. We asked participants to reflect on the programmatic features of current PFF programs, how these programs might help enhance the skills of students in learning outcomes assessment, and how they could be reshaped to have the greatest possible impact on both future faculty and the broader university community. Here, three priority areas were proposed:

(1) A Balanced Program Structure,
(2) Mentors for Teaching and Learning, and
(3) Potential Areas of Variation and Innovation.

(1) A Balanced Program Structure

Various structures for providing assessment skills to graduate students were discussed over the course of the workshop: mandatory TA-training programs; PFF or similar programs that focus only on graduate students aspiring to faculty careers; teaching certificates; department-based courses and activities; educational opportunities provided by a center for teaching and learning; or some combination of the above. Graduate schools play an important role in many PFF and similar professional development programs for graduate students. Participants discussed how housing a program in the graduate school can help universities address the problem of scale. Graduate school programs make it easier to reach graduate students from a range of programs, integrate expertise from across the campus, and enhance visibility and access. As the survey results discussed in the previous chapter indicated, both centralized and hybrid PFF programs are typically housed in graduate schools. Some noted, however, that centralization poses risks if it does not also leverage the needed support and engagement of departments and program faculty. And as one participant commented, a structure entirely supported by the graduate school or other non-departmental body might not encourage graduate students to become agents of change within their departments. In theory, a hybrid approach that combined departmental and university-wide elements even where programs are administratively centralized received strong support.

The idea of making a center for teaching and learning a potential partner in program delivery also received focused attention. Some participants indicated that a center for teaching and learning had been a critical partner by providing expertise in assessment and revamping more traditional offerings in TA training. For others, centers that focused on current faculty made it difficult to extend eligibility for training to graduate students without

redesign. Universities may wish to consider a range of possible options for providing cross-disciplinary support to programs.

These basic questions about structure and organization merit careful consideration and attention given the diversity of university types and graduate school structures.

(2) Mentors for Teaching and Learning

A need for graduate faculty to model assessment strategies to their students was echoed by all participants in the workshop, as was a concern that this modeling was not taking place. The discussion shed light on the fact that several aspects of the PFF model have the potential to fill this gap.

"I've found that it's been really helpful to have a research advisor and then also a mentor-teacher who is someone who cares very much about teaching."

-Graduate Student workshop participant

First, PFF and some similar programs typically provide students with teaching mentors who are not their research advisors. One student at the workshop indicated that this had made a significant difference in her preparation to teach and conduct assessments: "I've found that it's been really helpful to have a research advisor and then also a mentor-teacher who is someone who cares very much about teaching […] my teaching mentor was the one who encouraged me to go to a lot of [events] and forwarded emails on to me." A graduate dean echoed this point, saying that her graduate school had found it productive to pair students with faculty who are not supervising their research.

Second, institutional collaboration, also a core feature of PFF models, can help provide students with outside mentors, often at a college where teaching is a high priority. These collaborations give students "a high level of responsibility in a mentored context," said one dean, and allow students to learn about assessment from faculty with extensive expertise in this area.

At least at research institutions, mentoring students in assessment is rare since research supervisors typically focus on their students' research training. Where students do have access to mentors that focus on other responsibilities, such as teaching, this access is typically only made possible by programs such as PFF that currently reach only small numbers of future faculty, and which may not include explicit information about assessment approaches.

(3) Potential Areas of Variation and Innovation

Both graduate deans and graduate students indicated that faculty preparation programs had made a significant and positive impact on students' development of assessment skills. These programs varied widely in the degree to which they emphasized student learning assessment, and the approaches used to prepare future faculty in this area varied.

Characteristics of future faculty development programs cited as effective by workshop participants included:

- Collection of information on students' desired and actual professional development needs
- Development of learning outcomes for graduate students
- Engagement of groups with similar needs (faculty; adjunct staff; postdocs)
- Strategic recruiting of students and faculty
- Program activities matched to a student's career stage
- Teaching mentor(s) in addition to research supervisors
- Leadership development opportunities for students and faculty
- Professional development workshops for faculty mentors
- Incentives and rewards for faculty mentors
- Utilization of campus expertise/resources (centers of teaching and learning, libraries, experts, etc.)
- Partnerships with institutions committed to teaching and learning assessment
- Engagement of assessment experts from within or outside the university
- Inclusion of exposure to and practice with assessment technologies
- Means of recognizing student participation/completion (e.g., a certificate)
- Assessment of overall program success

In the specific area of curriculum development, effective characteristics cited include:

- Integration within existing structures/resources
- Progressively sequenced curricular content
- Options for students with different career goals
- Appropriate resources for students and faculty
- Professional development activities related to assessment

The contributions of participants to the discussion about the structural features of effective programs are not meant to be exhaustive or prescriptive, but are presented here to help focus future discussions of core strategies for developing and enhancing programs. Several deans and assessment experts indicated that it would be useful to examine, more rigorously, the efficacy of the activities and innovations that institutions are using in the area of assessment, both to develop a better sense of the core features of successful programs and to consider appropriate variations on these features.

Some of the features listed above might be considered core to any strong professional development program involving graduate students and faculty, including the PFF model. Yet it is also notable that a number of suggestions extend principles of outcomes-based learning to the graduate context: establishing learning outcomes for graduate students who participate in the program and developing and applying methods for assessing their learning. One of the participants who uses this method in her program observed that one of the best ways to teach the value of assessment to graduate students is to model it in a professional development program. A number of other participants supported the development of graduate learning outcomes that would include objectives for teaching and assessment. While this issue did not fall within the scope of the current project or workshop,

CGS is currently exploring the issue and assessing next steps.

Possible Curricular Content on Learning Assessment in PFF

Participants were also invited to share ideas about the potential curricular content for learning assessment in PFF programs. The following general questions framed discussion of this topic: "What are the key skills and areas of content knowledge relevant to student learning assessment and accountability that graduate students should acquire before assuming faculty responsibilities?"; and, "What are some of the key approaches, instruments or subject expertise that graduate students should have when they assume faculty responsibilities for assessing student learning?"

Responses to these questions emerged in different conversations that took place over the course of the workshop. Comments focused on two areas: knowledge and skills needed for higher education in general and those needed for assessment in the disciplines.

Assessment Expertise in Higher Education

Some comments addressed **general knowledge and skills** needed for undergraduate teaching across the disciplines. Many graduate students receive training or experience in teaching without a clear understanding of American higher education or the diversity of US institutions, some noted. Several stated that students would benefit from more contextual knowledge about the history of higher education, different institutional types, and the pressures and stakes surrounding assessment debates. Some social context for learning was also recommended, in particular, an awareness of the achievement gap and differences in learning styles, since these differences among students are often related to common learning obstacles.

Providing students with opportunities to acquire knowledge of the **Scholarship of Teaching and Learning**, including some grasp of theories about how students learn, such as "higher-order" learning, knowledge transfer, and metacognitive skills, was also widely recommended as a key objective for curricular content. Several assessment experts said that it would be particularly helpful for future faculty to develop an awareness of skills that undergraduates may apply across and between disciplines, such as ethical reasoning, integrative learning, and post-formal reasoning, i.e. creativity and innovation. Knowledge of assessment technologies and tools, such as rubrics and E-portfolios, was also considered important.

Participants also singled out specific **assessment skills in the context of teaching**. These included:

- Applying Scholarship of Teaching and Learning SOTL in context;
- Articulating learning outcomes at the course level;
- Applying and using assessment tools and technologies in the context of a course;
- Developing "pedagogical content knowledge," or matching teaching strategies to subject matter; and
- Integrating assessment into curricula.

Overall, there was an emphasis on skills that can be applied in the context of a course. While some acknowledged the value of understanding and applying assessment skills at departmental levels, a number of participants indicated that PFF and similar programs would be most effective if they focused on assessment within courses, the pedagogical setting in which new faculty will be most invested and for which they will have primary responsibility. One dean commented that programs should not aim to turn students into assessment specialists, but rather give them the skills that will allow them to enhance their teaching.

A final area of skills development included **professional values, attitudes and habits**. In general, these traits might be described as comprising a professional and scholarly ethos that both reflects and reinforces a strong investment in the outcomes of one's teaching on students. They included:

- A commitment to teaching as research
- An appreciation of diversity
- A concern for ethics and integrity
- Interpersonal skills
- A "sense of ongoing learning"
- Confidence in one's ability to make and achieve teaching goals ("self-efficacy")

Many of the professional attitudes listed above might be considered desirable qualities in any undergraduate faculty member, or indeed, in any educator. They also overlap with qualities of ideal faculty members listed in statements by institutions and groups of institutions seeking to recruit new faculty (Gaff and Pruitt-Logan, 2000, p. 45). However, as some noted, they also reinforce assessment in specific ways: an appreciation of social diversity is an important foundation for understanding that students learn in different ways and may not respond in identical ways to the same pedagogies or tests of knowledge and skills. The strong focus in PFF and similar programs on developing a teaching identity rooted in respect for students and the profession of undergraduate education has the potential to support specific knowledge and skills related to assessment.

Assessment Expertise in the Disciplines

Due to the broad scope of the workshop, the discussion of the skills and knowledge that might be built into PFF and similar programs was primarily focused on undergraduate teaching and learning. Some attention was given, however, to the types of skills and knowledge that could be honed in the context of a future faculty member's discipline. A general recommendation was that graduate students come to understand the relevance of the scholarship of teaching and learning to their discipline. The value of this point was borne out by a comment from a graduate student participant in the workshop, who explained that she found the work of applying general assessment strategies to her field of mathematics to raise many challenges and questions. While she had been exposed to the use of rubrics as part of professional development and training, she found that some metrics of student skill—in the example she provided, the creation of "elegant" proofs to mathematical problems—were difficult to measure using rubrics. She added that her teaching mentor had helped her to think through such questions as they had worked together to evaluate undergraduates.

Other participants in the workshop also pointed out possible areas where PFF and similar programs might support strong assessment in the disciplines. In the area of **discipline-specific skills**, some participants cited the creation of learning outcomes in relation to departmental goals, as well as the ability to assess capstone projects. Addressing **discipline-specific professional attitudes**, Marc Chun noted that effective future faculty must also be able to relate to undergraduates who have relatively little natural interest in their discipline. He added that many faculty members were drawn to their disciplines because they had excelled in it as younger students, and they may find it difficult to empathize with and spark interest in students who are not automatically oriented to their field.

These discussions raise an important question for further consideration: how much context for higher education assessment—at both the university and national levels—will graduate students need in order to effectively assess student learning in their classrooms? In answering this question it will be important for universities to consider issues of quality, purpose, and scale.

Measuring Success in Program Integration

Perhaps one of the strongest signs that graduate students have integrated assessment into their teaching practices would be measurable improvements over time in undergraduate learning. Faculty, graduate deans, and assessment experts will need to work together to explore the optimal models for integrating assessment into PFF and similar programs. All stand to benefit from more specific metrics focusing on the individuals directly involved in these programs, graduate students and their mentors.

A recommendation from many workshop participants was that universities adopt better mechanisms to assess the learning and leadership of graduate students who have participated in PFF and similar programs. Such assessment is needed both to measure the impact of practices and investments in such programs over time, as well as to potentially measure the comparative effects of different kinds of programs. In many ways, all of the recent PhD students who participated in the workshop modeled the skills and attitudes that graduate deans and experts saw as learning objectives for future programs: a facility with terms and concepts of the scholarship of teaching and learning, a strong sense of responsibility to measure and improve the learning of their students, experience with electronic platforms for assessment, an ability to describe the processes and challenges of their own development as teachers, and, perhaps most importantly, a conviction that teaching is a mode of scholarly inquiry and research. Better data on the impact of PFF and similar programs could also serve to make these attainments more visible to the graduate community.

Developing Programs with a Broader Impact

Parallel to the discussion of programmatic features of PFF, workshop participants also explored challenges, ideas, and issues surrounding the scale and potential impact of programs. Many deans at the workshop emphasized that faculty preparation programs on their campuses involve only a small number of students, often by self-selection. A number of deans at the workshop indicated that truly successful programs could promote changes

well beyond PFF activities and the institutions where they take place. One dean commented that while individual university efforts are important, improvements in individual programs depend on an integrated effort that builds on successes. In moving forward, many stressed, it will be essential to have a better understanding of the current networks in which PFF and similar programs are situated and generate new ideas for potential networks. Most of the observations focused on the U.S. context, although there was also a discussion of the international context in which outcomes assessment has become an issue of growing importance.

The Scale of U.S. Programs

The most central topic to emerge was the issue of scalability. The first issue introduced was the scale of programs within institutions, or the current small size of PFF cohorts. Several deans participating in the workshop indicated that they lacked the financial and personnel resources to create programs that reached a large number of students. Assistant Secretary Ochoa underscored this problem, observing that the most striking aspect of participants' presentations was that strong programs were only reaching a "small fraction" of graduate students.

A second and related issue concerned the national scalability of efforts to integrate assessment into PFF and other programs. On the one hand, there was positive evidence that university leaders are actively looking to capitalize on networks and institutional collaborations such as the University of Wisconsin-based Center for the Integration of Research, Teaching and Learning (CIRTL) Network focused on STEM fields, PFF and similar programs, and more informal structures of communications. A number of deans pointed out that they had adopted certain features of their programs from the websites of other universities. At present, this is happening on an ad hoc basis. But many deans urged that a better network of collaboration must be built so that individual programs are not wholly or mostly reliant only on their own institutional expertise and resources.

Potential Global Impact

Participants briefly discussed the preparation of international students who may return to their countries of origin to teach, and of domestic students who may take faculty positions outside the U.S. The question of whether future faculty teaching outside the U.S. would require radically different preparation for teaching responsibilities was also raised: some participants suggested that students who go abroad may not enter a context where teaching and learning is valued, while others indicated that awareness of student learning outcomes is essential in any national context. It was also noted that there are broader movements underway that are making evidence-based learning a common currency in global higher education. Donna Heiland, Vice-President of the Teagle Foundation, pointed out that the U.S. has helped to shape a global conversation about critical thinking skills. CGS President Debra Stewart added that the CGS Global Summit on Graduate Education had demonstrated broad international interest in student learning outcomes, at the graduate as well as the undergraduate level.[26] While it may be outside the scope of the PFF program to focus on the preparation of students for teaching outside the U.S., it will be useful to think about the potential global impact of this and other U.S. programs that prepare future faculty.

6. Conclusion and Next Steps

National efforts to enhance US higher education through a focus on student learning are well underway, but for these efforts to succeed, serious obstacles must be overcome. The opening chapters of this publication discussed several such obstacles, the foremost being: the perception in the academic community of a divide between assessment for improved learning and assessment for accountability, and the related perception that "student learning outcomes" are primarily about accountability to external stakeholders rather than improving student learning.

The tensions that surround the assessment of student learning in US higher education have been well documented, but a practical national strategy is still needed to ensure that reforms serve both the purposes of enhanced learning and institutional accountability. Such a strategy would need to be of sufficient national scale and scope to have the potential to transform faculty culture. To reflect field differences, it should include significant input from scholars and, like earlier phases of PFF, benefit from the contributions and support of disciplinary societies across a wide range of disciplines. At the same time, however, it should embrace lessons learned by assessment experts and galvanize significant institutional leadership from senior administrators to reinforce the notion that the assessment of student learning is a valued faculty responsibility.

We began this project with the hypothesis that such a national strategy would need to leverage existing professional development programs for preparing graduate students for their roles and responsibilities as faculty. The project activities described in this report sought to answer the following questions: *Is a nationally coordinated program to integrate student learning assessment into faculty preparation programs for graduate students viable and needed?* and, *If so, what key features should such a program address and what challenges should it anticipate?* We conclude by briefly summarizing what we have learned.

First, we learned that such an approach is viable, as many universities with PFF and similar programs have already begun to integrate the assessment of student learning into them, and that these developments have brought great benefits. Graduate students, faculty and deans report significant benefits of such exposure in terms of students' confidence as teachers and their success in obtaining faculty positions. Professional development programs for graduate students that effectively integrate skills in the assessment of student learning also have the potential to benefit many other individuals and groups beyond the students who report a competitive edge in the academic job market: a student's future colleagues, their future employer institution and its students, and even the larger culture of higher education. Future efforts to build on these successes and coordinate the integration of learning assessment into graduate student professional development programs should define, document, and realize tangible benefits to US higher education.

We learned that key obstacles and challenges must be overcome, however, if such programs are to have any broader impact on faculty culture. Many deans reported that their PFF or similar programs currently reach only a small percentage of the host institutions' graduate students who aspire to faculty careers. While many of the best programs reach

small numbers of students, other programs have scaled back their efforts and reach since receiving the seed grants to develop them over a decade ago, and many US universities still lack professional development programs for graduate students aspiring to faculty careers. Even active programs are often constrained by the expertise and resources of their particular institutions.

In light of this new information, we conclude that priority areas for future work should include exposing more individual students to learning assessment strategies in PFF and similar programs and creating broader networks for the exchange of promising practices and lessons learned. A parallel and complementary goal would be to develop a framework for facilitating the exchange of information within and across institutions about how to use learning assessment to measure the effectiveness and success of such programs.[27] One of the key uncharted contributions of the current integration of learning assessment into PFF programs could be to provide a model for evaluating the effectiveness of these programs in a way that could potentially encourage greater participation by students, greater endorsement by faculty, and greater adoption by US universities.

The scholarship of teaching and learning was a core feature of several grant-funded PFF programs; "pedagogy in the discipline" was an important common component of many departmental and hybrid programs; and collaboration with strong centers for teaching and learning was, and continues to be, a common characteristic of PFF. The assessment of student learning, however, was neither a required nor a common feature of PFF, nor was it a criterion for evaluating the success of PFF programs. The results of this project suggest that while most graduate student participants in PFF programs are now exposed to learning assessment principles and practices for individual courses, broader uses of learning assessment receive less attention, and there is little opportunity for best practice networking across institutions. As a result, some of the key challenges (faculty support, broad student participation, and perceived relevance) remain, and therefore prevent these programs from achieving their full potential, either on their own campuses or in the broader faculty culture. Achieving this potential will require new models of collaboration to identify and document best practices and to encourage the broad integration of these practices into all graduate programs that seek to prepare students for faculty careers.

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Web Resources

Center for the Integration of Research, Teaching, and Learning (CIRTL)
http://www.cirtl.net/

Council of Graduate Schools
Preparing Future Faculty National Office (URL)
www.preparing-faculty.org

NEASC/CIHE standards
http://cihe.neasc.org/standards_policies/standards/standards_html_version

Lumina's Tuning USA Project
http://www.luminafoundation.org/our_work/tuning/

The National Institute for Learning Outcomes Assessment
http://www.learningoutcomeassessment.org

The Teagle Foundation
http://www.teaglefoundation.org/

The Carnegie Corporation of New York
http://carnegie.org/

Endnotes

[1] For a review of this history and variety see Shavelson and see Chun.

[2] George Kuh (2010) warns of the dangers of prematurely including learning outcomes in university rankings. He writes that significant work must be done before valid measurements of desired learning outcomes can be included in ranking systems: "[…]ranking outfits need valid, reliable data from large numbers of colleges and universities that have the same or comparable measures" (Kuh, October 7, 2010).

[3] Driving this heightened focus on learning assessment has been a convergence of forces, including: influential national reports such as that of the Spellings Commission on higher education (*A Test of Leadership: Charting the Course of U.S. Higher Education*, 2006) and the Educational Testing Service's *Culture of Evidence: Postsecondary Assessments and Learning Outcomes*, 2006; an increase in follow-up requests by regional accrediting bodies for additional institutional documentation of the assessment of student learning outcomes; and recent calls for greater oversight in the quality of student learning by state governing boards (Johnston and Long, 2010).

[4] It is important to note that resistance is not as common in disciplines where specialized accreditation is conducted.

[5] Of course, this is not to say that measures such as degree completion have only been used as proxies for quality learning or that they have not driven other important national conversations about educational quality. The CGS PhD Completion Project, for example, has been instrumental in empowering graduate schools and program faculty to work together to address a variety of interventions in policies and practices.

[6] The article appears in a new online section of the *Chronicle*, "Measuring Stick," created to monitor the growing national discussion around quality and accountability in higher education.

[7] The importance of faculty involvement was underscored in the set of recommendations that came out of a recent NILAO Report on learning outcomes assessment (Kuh and Ikenberry, 2009). The report recommended that "Faculty members must systematically collect data about student learning, carefully examine and discuss these results with colleagues, and use this information to improve student outcomes" (p. 28). The difficulty of this effort was also acknowledged in the report.

[8] Hutchings 2010, p. 15. This paper recommends six methods of directly connecting assessment with faculty teaching: 1) Build assessment around the regular, ongoing work of teaching and learning; 2) Make a place for assessment in faculty development; 3) Integrate assessment into the preparation of graduate students; 4) Reframe assessment as scholarship; 5) Create campus spaces and occasions for constructive assessment conversation and action; and 6) Involve students in assessment (3).

[9] AAC&U's project, Liberal Education and America's Promise (LEAP) has, for example, defines essential learning outcomes divided into four areas: (1) Knowledge of Human Cultures and the Physical and Natural World; (2) Intellectual and Practical Skills; (3) Personal and Social Responsibility; and (4) Integrative Learning. See AAC&U 2007, p. 3.

[10] See, for example, AAC&U's VALUE Project (Valid Assessment of Learning in Undergraduate Education), which produced 15 rubrics for student learning that have been developed by faculty and experts on student learning.

[11] See Shulman 2002 for a discussion of the importance of measuring student engagement.

[12] For purposes of this paper, the term "accrediting bodies" refers to the agencies, and the number (six) does not count multiple commissions at each agency as a separate body, as is the practice in some citations. These six regional accrediting bodies include: Middle States Association of Colleges and Schools, New England Association of Colleges and Schools, North Central Association of Colleges and Schools, Northwest Association of Accredited Schools, Southern Association of Colleges and Schools, and Western Association of Schools and Colleges.

[13] Standard 14 of the Middle States Commission's standards reads: "Assessment of student learning demonstrates that, at graduation, or other appropriate points, the institution's students have knowledge, skills, and competencies consistent with institutional and appropriate higher education goals." See: http://www.msche.org/?Nav1=About&Nav2=FAQ&Nav3=Question07. All URL's retrieved on March 19, 2010. The New England Association of Schools and Colleges (NEASC), Commission on Institutions of Higher Education's standards for accreditation includes more detailed expectations:

> The institution uses a variety of quantitative and qualitative methods to understand the experiences and learning outcomes of its students. Inquiry may focus on a variety of perspectives, including understanding the process of learning, being able to describe student experiences and learning outcomes in normative terms, and gaining feedback from alumni, employers, and others situated to help in the description and assessment of student learning. The institution devotes appropriate attention to ensuring that its methods of understanding student learning are trustworthy and provide information useful in the continuing improvement of programs and services for students (section 4.50).

NEASC standards include explicit statements on faculty responsibility for student learning outcomes assessment ["Responsibilities of teaching faculty include instruction and the systematic understanding of effective teaching/learning processes and outcomes in courses and programs for which they share responsibility" (section 5.3)] and on transparency ["The institution has readily available valid documentation for any statements and promises regarding such matters as program excellence, learning outcomes, success in placement, and achievements of graduates or faculty" (section 10.12)]. NEASC/CIHE standards are available online at: http://cihe.neasc.org/standards_policies/standards/standards_html_version

[14] See Kuh 2009 and Provezis 2010.

[15] Examples include Lumina's Tuning USA Project (http://www.luminafoundation.org/our_work/tuning/), and the National Institute for Learning Outcomes Assessment (http://www.learningoutcomeassessment.org), as well as other activities supported by the Teagle Foundation, Lumina, and the Carnegie Corporation of New York.

[16] The first three depend upon multiple choice responses while the CLA involves performance tasks that tap into the student's ability to draw conclusions based upon multiple sources of information (Shavelson, 2007).

[17] Examples of such graduate reform initiatives include: the Carnegie Initiative on the Doctorate; the Responsive PhD initiative of the Woodrow Wilson National Fellowship Foundation; and Re-envisioning the PhD.

[18] In the late 1980's the Pew Charitable Trusts championed a series of conferences on this topic (Chism & Warner, 1987; Lewis, 1993; Nyquist, Abbott, Wulff, and Sprague, 1991). Out of this conference, a series of grant-funded initiatives by Pew, the National Science Foundation, and the Atlantic Philanthropies to CGS working with the Association of American Colleges and Universities funded centralized and discipline-specific PFF programs across the United States.

[19] S. Goldsmith, D. Haviland, K. Daily, and A. Wiley. 2004. "Preparing Future Faculty Initiative: Final Evaluation Report." http://www.aacu.org/pff/pdfs/PFF_Final_Report.pdf

[20] See Gaff, Pruitt-Logan, and Weibl (2000) and Gaff, Pruitt-Logan, Sims and Denecke (2003).

[21] For a listing of professional development programs developed without CGS PFF grant funds, see: http://www.preparing-faculty.org/PFFWeb.Like.htm.

[22] "With both centralized and departmental components, a hybrid model enhances the visibility, credibility, and institutionalization of PFF programs on university campuses. Case studies provided a clear sense that campuses with either centralized or hybrid models have PFF programs that are larger, more visible, and enjoy greater institutional support than stand-alone departmental programs" (Goldsmith et al., 2004, available online at: http://www.aacu.org/pff/pdfs/PFF_Final_Report.pdf).

[23] Participants included 15 graduate deans representing different types of institutions (public and private, from different U.S. regions); 6 researchers and experts in the area of student learning outcomes assessment; six recent or current graduate students who had participated in PFF or similar programs; and representatives of two organizations that specialize in the development of assessment tools for higher education.

[24] See Carnegie 2006.

[25] An example of a pilot program specifically focused on helping graduate students cultivate a research-based teaching practice, Princeton University's, "Effective Teaching and Learning in a Research-Based Environment," is described in Appendix A.

[26] Papers and discussions highlighting the emergence of learning outcomes for graduate students will be featured in the proceedings of the 2010 Strategic Leaders Global Summit on Graduate Education, *Global Perspectives on Quality Assessment: Proceedings of the 2010 Strategic Leaders Global Summit on Graduate Education* (CGS: forthcoming 2011).

[27] Such an effort would support one of the four recommendations for the future of PFF made by external evaluators in a study commissioned by the funding agencies that supported the original grant-funded phases: "Future studies of PFF should document faculty career outcomes of alumni and assess the impact of alumni on graduate and undergraduate education, including on student achievement" (Goldsmith et al., 2004, p.3).