UNIVERSITY OF CALIFORNIA, ACADEMIC SENATE

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Chair of the Assembly and the Academic Council
Faculty Representative to the Board of Regents
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October 8, 2009

SENATE DIVISION CHAIRS
SYSTEMWIDE SENATE COMMITTEE CHAIRS
UNIVERSITY OF CALIFORNIA

Re: Report of the Undergraduate Educational Effectiveness Task Force

Dear colleagues:

In response to a Senate request, the Undergraduate Educational Effectiveness Task Force (UEETF) was established and charged with developing procedures for identifying and articulating the educational objectives of UC undergraduate academic programs and with determining methods for evaluating the success of those programs. The enclosed report was produced after intensive analysis and consultation with faculty and administrators on all campuses. It proposes that each UC campus establishes departmentally-specific learning assessment programs with the dual aims of improving undergraduate education and informing the public about learning achievements of UC undergraduates.

For your information, I have enclosed a cover letter in which the Clair Brown, the Chair of UEETF, introduces the report and explains its guiding principles; the report, itself; and a series of appendices.

Although the request for review is being sent to all divisions and systemwide committees, any committee or division may decline to comment if they feel it is not in their purview. If you choose to review this, please send your comments to senatereview@ucop.edu by Please send your comments to senatereview@ucop.edu by Monday, **January 4**, 2010.

Please do not hesitate to contact me if you have any questions regarding this request.

Sincerely,

Henry C. Powell, Chair
Academic Council

Copy: Martha Winnacker, Academic Senate Executive Director
Clair Brown, Chair, UEETF
Hillary Baxter, Academic Planning Analyst, UCOP

INTERIM PROVOST LARRY PITTS
Chair, Academic Planning Council

ACADEMIC COUNCIL CHAIR CROUGHAN
Vice Chair, Academic Planning Council

Dear Interim Provost Pitts and Chair Croughan,

In response to a recommendation by the Academic Senate,[1] the Academic Planning Council formed the Undergraduate Education Planning Group (UEPG) in 2007 to advise on the future of undergraduate education, with the ultimate goal "... to make visible the distinctive value of the undergraduate educational experience of UC and to articulate UC's philosophy and objectives for undergraduate education." UEPG created two working groups. The first, the Undergraduate Educational Effectiveness Task Force (UEETF), was charged to develop procedures for identifying and articulating the educational objectives of UC academic programs and methods for evaluating the success of those programs. (The second group, Post Graduate Outcomes Task Force, was charged to make recommendations for tracking UC students after graduation.) Attached to this letter is the final report of the UEETF.

The UEETF was charged specifically with providing "guidance to campuses, particularly academic departments, on ways of developing and communicating learning objectives and student achievement of those objectives." The UEETF undertook a year of study, analysis, and discussion in developing our recommendations and report. We also engaged with faculty and administrators across UC campuses, and our recommendations build on the UC campuses' assessment programs.

The product of those efforts is what we are proud to propose as the "UC Way to Educational Effectiveness": each UC campus establishes departmental learning assessment programs with the dual aims of improving undergraduate education and informing the public about learning achievements of UC undergraduates. This approach, which integrates assessment of student learning and accountability for educational effectiveness, is vital to ensure that UC undergraduates receive a world-class education that prepares them for future success.

Three principles guided the writing of the report: (1) responsibility for assessing student learning resides with the faculty; (2) assessment should be discipline specific and locally (campus) defined, with Senate oversight and participation; and (3) departmental assessment programs must be supported by the required administrative resources and infrastructure for effective implementation. The global higher education reform movement challenges UC faculty to address the call for greater accountability responsibly. While it may not be possible to develop a measure of all the things departments are trying to achieve through instruction, faculty should aim to measure what we can – appropriately, and with the goal of improving undergraduate education.

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[1] http://www.universityofcalifornia.edu/senate/reports/ac.ucep.ug.edu.tf.0406.pdf

With the unanimous endorsement of the UEETF's membership, I commend this report to you and the Academic Planning Council for review. It is my hope that the report can be distributed for simultaneous review by the Academic Senate and by the University administration. I would be happy to discuss the report's findings and the Task Force's work with all reviewing agencies.

Sincerely,

Clair Brown, Chair
Undergraduate Educational Effectiveness Task Force

cc: Members, Undergraduate Educational Effectiveness Task Force
Vice Provost Greenstein, Academic Planning, Programs and Coordination
Academic Planning Analyst Baxter

UC Way to Educational Effectiveness

A report by

The Undergraduate Educational Effectiveness Task Force

Clair Brown, UEETF Chair, UC Berkeley
Mark Appelbaum, UC San Diego
Ramesh Arasasingham, UC Irvine
Michael Brown, UC Santa Barbara
Andres Cuervo, UC Riverside (student representative)
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Pat Turner, UC Davis
Keith Williams, UC Davis

University of California
July 2009

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Executive Summary

The Undergraduate Educational Effectiveness Task Force (UEETF) strongly believes in assessment of student learning (1) as a means of improving the quality of undergraduate education, and (2) as the basis for communicating to the public the learning outcomes of UC undergraduates.

UEETF believes that responsibility for assessing student learning resides with the faculty; should be discipline specific and locally (campus) defined, with Senate oversight and participation; and supported by the required administrative resources and infrastructure for effective implementation.

UEETF, after careful study of assessment and accountability philosophies and practices, presents for the University community consideration a series of specific recommendations for assessment and accountability. Overall we recommend that each campus have department/program-level undergraduate learning goals assessments to guide program improvements in undergraduate education, and each campus use the department/program-level assessments of student learning to communicate achievement of student learning outcomes to the public.

While the present economic climate may limit substantial investment in the development of new tools and practices, UEETF believes that, even in these austere times, continual progress can be made in implementing assessment at the department/program level. When better times provide more resources for undergraduate education, departments will have their on-going assessment processes to guide them in their innovations of the undergraduate program.

UEETF recognizes that the assessment and accountability programs being developed at UC campuses will require time to implement fully. These activities—developing the assessment process, performing departmental/program assessment, and developing accountability reports — require effective administrative support at the campus and system-wide levels.

Recommendations

1. Each campus should have a learning assessment program in which faculty in every undergraduate major develop discipline-specific learning goals, map goals to the curriculum, and assess majors' mastery of the learning goals. Learning goals should include skills related to critical thinking, analytical reasoning, written communication, and other discipline-based skills. Departmental assessment processes should be integrated with evaluation processes required by accrediting agencies so that each department has only one assessment program.

2. The process and methods for properly assessing majors' achievement of the department's specific learning goals must be embedded in the curriculum (i.e., assessment is done periodically on a sample of assignments such as papers, labs, projects, and exam questions that represent specific learning goals). The assessment process should build on existing departmental resources and structures and provide ongoing feedback to improve the department's instructional program as well as to modify the learning goals and the assessment process.

3. Academic review of departmental undergraduate programs should include a review of the department's learning assessment process, including an evaluation of how the results of the assessment of student learning are used to improve the undergraduate program. Campus administrative leaders should incorporate the results of departmental student learning assessment into their strategic planning process.

4. Campus-level development of department-level learning assessment programs should be supported by communication among UC campuses about experiences, materials, and lessons learned. The Academic Senate, UC Office of the President, and other system-wide groups should endorse and support both formal and informal information exchange about learning assessment programs.

5. Standardized tests to measure undergraduate learning, if used, must allow measurement of faculty-developed, curriculum-based learning goals, and the results should provide valid information that can be used to improve the department's instructional program. The learning goals evaluated by these tests should be appropriate to the major.

6. Campuses should publicly communicate through relevant sources evidence of student and campus educational achievements, including information on every department's learning assessment program. The information should be user-friendly and available on the UC Undergraduate Campus Profiles websites which should have links to the departmental assessment programs. Information on the learning goals, the evaluation process, and measurement of majors' achievement of these goals should be included in the public information about the departmental assessment programs.

7. Campuses should consider developing methods of aggregating measures of students' achievement of departmental learning goals into meaningful, comprehensive public statements about overall undergraduates' learning achievement. Development and reporting of such aggregated measures is sufficiently complex that campuses should be supported in this effort by UCOP, the system-wide Academic Senate, and campus administrators (e.g., Undergraduate Deans).

8. Because the value of a university education is made manifest in contributions over the graduates' lifetimes, full assessment of the effectiveness of a UC undergraduate education must include information about what those graduates contribute to their families, communities, and workplaces. UEETF supports the development of a UC exit and alumni survey across campuses.

9. Campus assessment and accountability activities should include the broad array of information on student and campus achievement provided by existing reports, such as the University of California Undergraduate Experience Survey (UCUES), the Campus Profiles, and the University's Accountability Framework. UC should continue to collect information about the overall undergraduate experience to augment information derived from departmentally-based assessments.

10. Given its responsibilities for curriculum and admissions matters, the Academic Senate will be a key player in any activity to develop assessment of and accountability for undergraduate education system-wide.

Introduction

Responding to a recommendation by the Academic Senate, the Academic Planning Council in June 2008 charged the Undergraduate Educational Effectiveness Task Force (UEETF) with providing "guidance to campuses, particularly academic departments, on ways of developing and communicating learning objectives and student achievement of those objectives."[1] [*Appendix 1*]

UEETF undertook a year of study, analysis, and discussion in developing our recommendations and report. We also engaged with faculty and administrators across UC campuses, and our recommendations build on existing campus assessment programs. These programs are faculty-driven and supported by the Academic Senate.

The product of these efforts is what we are proud to propose as the "UC Way to Educational Effectiveness": each UC campus establishes departmental learning assessment programs with the dual aims of improving undergraduate education and informing the public about learning achievements of UC undergraduates. This approach, which integrates assessment of student learning and accountability for educational effectiveness, is vital to ensure that UC undergraduates receive a world-class education that prepares them for future success.

Context

UC formed UEETF at a time when national discussion focused, in part as a response to recommendations of the Spellings Commission, on communicating to the public individual institution's success in educating undergraduate students. In response to conversations at the federal level, accreditation agencies incorporated requirements that colleges and universities report explicitly on the learning outcomes their students were expected to achieve.

Postsecondary associations such as the Association of Public and Land Grant Universities (APLGU)[2] and the American Association of State Colleges and Universities (AASCU) developed their own models of public accountability for educational effectiveness, including the use of standardized tests to compare student learning across institutions. Other organizations—the Association of American Universities (AAU) and the Association of American Colleges and Universities (AAC&U), for example—took a different approach to learning assessment that did not include standardized tests. As part of our study, UEETF compared these various philosophies and methods of measuring and communicating educational effectiveness.

[1] In June 2008, UC Provost Hume and the Undergraduate Education Planning Group, a subcommittee of the Academic Planning Council, formed two task forces: the Undergraduate Educational Effectiveness Task Force (UEETF), chaired by UC Berkeley Professor Clair Brown; and the Postgraduate Outcomes Task Force, chaired by UCLA Assistant Vice Chancellor Ralph Amos. The latter was charged with recommending "methods by which the campus and the University as a whole can better describe and evaluate the longer term impacts of a UC undergraduate education." http://www.universityofcalifornia.edu/senate/reports/ac.ucep.ug.edu.tf.0406.pdf

[2] Formerly the National Association of State Universities and Land Grant Colleges or NASULGC.

Definitions and Approach

UEETF's recommendations and report are based upon analyses of the literature, the various assessment approaches, national and international discussions (such as those associated with the Bologna Pact) as well as the requirements of accreditation bodies [*Appendix 2*]. The latter includes the Western Association of Schools and Colleges (WASC), the regional organization that accredits UC campuses, and ABET, the national organization that accredits postsecondary degree programs in engineering and applied science.

UEETF's analysis is grounded in the philosophy that good educational practice requires good learning assessment practices. The ultimate goal of the assessment process is to ensure educational effectiveness.

As defined by UEETF and as used in this report***, assessment*** *is an on-going three-stage process that identifies learning goals, measures students' mastery of the goals, and uses the results to improve instructional programs as well as refine learning goals****.*** More precisely, the three iterative stages of assessment involve the following activities:

- faculty clearly define and articulate the learning goals for their majors; faculty map those learning goals to the curriculum to demonstrate how students are expected to master the learning goals;

- faculty assess student achievement of learning goals, i.e., faculty directly measure student learning outcomes and provide measurements of students' achievement of learning goals; and,

- faculty use information derived from the assessment process to improve the instructional program for majors and to refine learning goals.

UEETF's analysis also takes into consideration the goal of communicating to the public the learning achievements of UC undergraduates. In particular, we are mindful of the UC President's obligation to inform various public constituencies, including those with funding responsibilities, about the educational effectiveness of the University of California.

UEETF terms this important role ***accountability***, and defines it as a reporting activity to the public that includes the learning achievements of UC undergraduates.

Furthermore, UEETF believes that accountability must balance the need for concise summaries of UC undergraduate learning achievements with the requirement that measures of student outcomes be meaningful and related to instructional programs and their improvement. Accountability with respect to undergraduate learning is necessarily grounded in assessment, and some learning assessment outcomes can be used for accountability, as we show below.

Organization of the Report

The assessment goal of providing useful feedback about undergraduate instructional programs for the purposes of innovation and improvement as well as the accountability goal of providing meaningful information to the public on undergraduates' learning achievements dominate both the theory and practice of evaluating student learning outcomes at the college level. They also form the organization of this report.

The report is divided into two major sections, the first addressing student learning assessment and the second addressing educational accountability. The section on learning assessment describes:

- what is being done across UC campuses to implement assessment of student learning outcomes to improve undergraduate education,
- what we have learned so far from the on-going assessment programs, and
- how the programs can be strengthened at the campus level and supported system-wide.

The section on accountability provides:

- analysis of standardized tests of student learning to determine how useful such tests are in improving undergraduate education and in providing information about student learning achievement to the public;
- exploration of how to use information from the learning assessment process for public accountability reporting; and
- description of other information that is or can be communicated to the public about various aspects of undergraduate educational effectiveness.

UEETF recommends that the "UC Way to Educational Effectiveness" is one in which information from the learning assessment process forms the basis of public accountability reporting. This approach will provide accountability to the public through measures of student learning outcomes yielded by assessment processes at the program level on all UC campuses.

UEETF is mindful that educational effectiveness at the undergraduate level incorporates many aspects beyond classroom learning. In addition to evaluating instructional experiences and learning, a comprehensive review of educational effectiveness must include evaluation of how other collegiate experiences prepare students for their many roles in life—in their families, communities, and workplaces. This report focuses on defining and assessing student learning outcomes—activities the faculty deliver and control—as the *primary* way to evaluate educational effectiveness. This focus is consistent with the UEETF charge. However, because student learning achievements do not occur in a vacuum and a multidimensional array of information is required to provide a full picture, a portion of the report addresses the broader array of information available to evaluate educational effectiveness.

Stakeholders

The assessment process for improving undergraduate education and for providing accountability requires that we determine what is measured and how it is measured, and we identify the stakeholders for the assessment information and the appropriate use of the information by them. The stakeholders comprise many distinct constituents. These include the faculty, chancellors and other administrative leaders, the UC Board of Regents, state legislators, citizens of California, current and prospective students and their parents, donors, accrediting bodies and other organizations (governmental and non-governmental) that have an interest in UC's educational effectiveness.

With respect to student outcomes, each of these constituents may desire different types of information. Some are interested in students' learning achievements; others care more about students completing their bachelor's degrees, perhaps pursuing graduate education or professional training, and making productive contributions to the economy; still others want to understand the cost and value of undergraduate education. We see that even the most basic question, "What information should we provide to the public?" has multiple answers depending on which "public" we mean. UEETF thinks that the information on educational effectiveness should include outcomes considered useful by a broad array of constituents [*Appendix 3*], and we try to accomplish this in our recommendations.

UEETF hopes this report provides the critical information required to understand our recommendations. Discussion and conclusions are based on a wide range of research and data, and references for these and other supporting materials are provided in the appendices. Our collective hope is that this report proves useful to the University community as a whole and to the State of California.

Section I: Assessment

Summary: Faculty-driven assessment by departments or programs of their majors' achievement of learning goals is a valuable and essential process for understanding student learning and for strengthening undergraduate curriculum at the program level.

Recommendations:

1. Each campus should have a learning assessment program in which faculty in every undergraduate major develop discipline-specific learning goals, map goals to the curriculum, and assess majors' mastery of the learning goals. Learning goals should include skills related to critical thinking, analytical reasoning, written communication, and other discipline-based skills. Departmental assessment processes should be integrated with evaluation processes required by accrediting agencies so that each department has only one assessment program.

2. The process and methods for properly assessing majors' achievement of the department's specific learning goals must be embedded in the curriculum (i.e., assessment is done periodically on a sample of assignments such as papers, labs,

projects, and exam questions that represent specific learning goals). The assessment process should build on existing departmental resources and structures and provide ongoing feedback to improve the department's instructional program as well as to modify the learning goals and the assessment process.

3. Academic review of departmental undergraduate programs should include a review of the department's learning assessment process, including an evaluation of how the results of the assessment of student learning are used to improve the undergraduate program. Campus administrative leaders should incorporate the results of departmental student learning assessment into their strategic planning process.

4. Campus-level development of department-level learning assessment programs should be supported by communication among UC campuses about experiences, materials, and lessons learned. The Academic Senate, UC Office of the President, and other system-wide groups should endorse and support both formal and informal information exchange about learning assessment programs.

The Goals and Process

The goals of the assessment process are to understand how students progress through the major to achieve specific skills and knowledge and to use the evaluation of student learning outcomes to improve the instructional program.

Assessment of learning outcomes is based upon the premise that students learn specific skills and knowledge in their undergraduate programs. Faculty have the responsibility for describing the department's learning goals, mapping them to the undergraduate curriculum, and assessing the students' achievement of those goals, i.e., measuring student learning outcomes. Direct assessment of learning goals is done through evaluation of student performance in a sample of specific assignments, such as problem sets, lab assignments, studio projects, written reports or papers, and exam questions.

Several major questions and issues must be addressed in developing an assessment process, and experts have grappled with these issues over a long history. In particular, UEETF addressed the following questions:

- What are learning outcomes? Who defines them? Are they global, generic and related to general education? Or are they specific, curricular and related to the major?
- What type of metrics should be used to evaluate learning? What should be the range of coverage for these measurements? That is, should there be one test for all students or separate evaluation mechanisms by subgroups? Can some students "opt out" and if so, on the basis of what rules? Can there be multiple assessments simultaneously?
- Who is accountable for student learning outcomes (i.e., is it connected to the curriculum and who is responsible for ensuring student learning achievement)? Is there regular review of the results?
- How can the University demonstrate accountability for overall student learning?

- Who are the "stakeholders" for information about student learning? Who has access to the data and under what conditions?

Importance of Context/Discipline in Assessing Performance

A key question for UEETF was whether assessment of student learning is better practiced within a general context (e.g., assessment of undergraduates on global skills on a national basis without specific links to their majors) or within a disciplinary context. A long-standing debate about which approach is better has not produced a definitive answer. However, **based on the available evidence, UEETF has determined that learning goals that are developed within the context of a discipline provide a richer and more rigorous set of knowledge and skills than learning goals situated in a general context, and thus we focus on assessment at the program level.** A more detailed discussion of the limitations of general standardized testing as a method of assessing student learning, and the limited usefulness of such information in helping to improve a department's instructional program, is included in the second section dealing with accountability.

The debate over the importance of context in performance evaluation is as old as the development of the formal psychometric methods that undergird most contemporary educational/psychological measurement systems. The fundamental and still unresolved issue is whether valid information about the impact of an instructional program or about the skills of an individual can be gleaned from a static assessment instrument independent of the context in which the instruction was delivered or in which the skills are to be utilized.

Closely related to the practices for learning assessment in undergraduate education are the practices that guide the assessment of learning outcomes in medical and other professional schools. These forms of assessment are far more complicated and nuanced than almost anything that has been proposed for undergraduate assessment. They are always done in the context of a given profession and what is taken to be the mandatory skill set for that profession, including ethical behavior. For many of these areas, the ultimate learning indicator is the percentage of students passing the licensing examinations. It is typical for such assessments to have components that go beyond written answers (e.g., the dental exams requiring production of finished models).

Professional schools also have a long history of performance-based assessment of students (and by implication of the instruction that they receive), including moot court for law students, sophisticated body simulators for practice surgeries by medical students, and full scale project design for those in architecture. Professional assessment both by examination and by performance is always developed in the context of the training. Even in domains with high levels of generalization, such as ethics, assessment is conducted with examples and situations specific to the field of training.

For assessment of undergraduate learning, the issue parallels a long standing debate in writing instruction, which has a large literature associated with it. The fundamental question is whether writing is a general skill that transfers to all areas or writing is something that is taught and needs to be mastered and assessed in context. Many believe that in order for writing to be effective it

has to be consistent with the fairly narrow conventions of a particular field and, by extension, the assessment of the effectiveness of writing instruction must be done within the context of that field. Similar arguments can and have been made in the domain of critical thinking. For example, can critical thinking be assessed in a meaningful and rigorous way independent of knowledge of a particular field—as in general questions that can be understood by all majors—or does critical thinking need to be assessed within the context of a discipline?

This debate continues with both theoretical and empirical arguments. While the literature is quite large and varied and while studies do not provide a single conclusion, **UEETF agrees with the following consensus**:

- The expression of mastery of learning outcomes, particularly for such "deep learning" outcomes as critical thinking, quantitative reasoning, and written communication, is substantially different in different academic domains (Laird, Shoup, and Kuh, 2005).

- Variation in student performance across academic domains (i.e. departments) at any one institution is substantial. For example, Chatman (2007 – p. 1) reports that the UCUES data demonstrate "greater variance among majors within an institution than between equivalent majors across institutions" on a series of academic items.

- For an assessment to be useful for the improvement of undergraduate education (in addition to providing accountability evidence), the assessment must be viewed by the faculty of the unit in which improvement is being sought as being relevant to the instructional program.

- For assessment of institutions to be valid collectively (i.e. aggregated over students and departments), they must be valid at the level of the major (department).

UEETF therefore recommends assessments designed for specific majors. Faculty should define learning goals for the major, map the goals to the curriculum, and directly assess student achievement of the goals. Based upon assessment programs now evolving at UC campuses, UEETF thinks that the learning goals of departments should include discipline-specific critical thinking, analytical reasoning, written communication, and other discipline-based skills. A discipline-specific approach provides a more meaningful assessment of student learning outcomes and is more useful for improving instructional programs than is an assessment method based upon a generic set of learning outcomes evaluated out of context.

Learning from On-Going Assessment Programs

Assessment programs under development at UC and other universities, including Virginia and Maryland, demonstrate practices that are effective in developing learning goals and evaluating student learning achievements while minimizing the resources used. Because development of assessment is at a relatively early stage, we do not think that specific programs currently in use necessarily represent "best practices." Here we highlight ongoing assessment processes—a mix of campus-wide and departmental efforts—aimed at improving undergraduate education, along with other goals such as communicating the process to various stakeholders.

UC Campus Assessment Initiatives and Illustrative Program Activities

Senate-mandated, Department-specific Assessment Process at UC Berkeley
The Berkeley campus is in their second year in a Senate-mandated, faculty-driven, discipline-specific assessment process for each major. Departments have developed learning goals for their majors and mapped the learning goals to the curriculum. Links to each major's Undergraduate Learning Goals will be available online in summer 2009. In the current phase, departments are developing pilots for direct measures of their students' performance in achieving these learning goals [*Appendix 4*].

Improving Critical Thinking and Writing Skills at UC Davis
The Davis campus is working to improve students' critical thinking and writing skills through a Spencer-Teagle Foundation funded initiative to improve undergraduate student learning and assessment in systematic ways. The campus's objective is to experiment with new courses and/or new teaching elements/modules that could be incorporated into existing courses. In one curricular pilot, the University Writing Program is partnering with a large department to develop pedagogically-appropriate writing assignments for a large General Education class. The goal of the pilots is to shift to outcomes-based and value-added assessment measures of effectiveness of student learning. Examples of assessment activities include program documents, user/client surveys, collection of course materials and student work, interviews of students and faculty. Evaluation of rubrics and digital archives serves as a centerpiece of this effort.

Student Learning in the Major Initiative at UC Irvine
UC Irvine developed a multi-year plan to assist faculty to guide their departments toward establishing assessment programs for their major. The campus-wide initiative is in its second year and provides workshops, consultations, and assessment grants to Senate faculty to help identify learning goals in the major, to align learning goals to the major's curriculum, and to assess whether graduating majors were meeting those goals. Each department was requested to provide a progress report on where it is in the assessment process by December 2008 [*Appendix 5*].

Use of Capstones for Assessment at UCLA
UCLA is using capstone courses for assessing student learning for WASC review. Capstone experiences provide students the opportunity to demonstrate mastery and integration of knowledge and learned abilities within a discipline. UCLA requires departments applying for capstone certification to establish learning outcomes and associated assessment approaches related to capstone experiences. Departments are provided with assistance in achieving this and to that end UCLA has prepared a document, *Guidelines for Developing and Assessing Student Learning Outcomes for Undergraduate Majors* (currently in draft form) to provide guidance for *all* majors, whether capstone or not [*Appendix 6*].

Alignment of Course and Program Outcomes at Merced
As a new campus, UC Merced has had the opportunity to focus on learning even before its first undergraduate class was admitted. Faculty have developed course-level student learning outcomes (SLOs) to support student achievement of program learning outcomes (PLOs) in undergraduate majors and graduate curricula. SLOs are required for new course approval as per

pending Academic Senate policy. They appeared in most fall 2008 and nearly all spring 2009 course syllabi and will be listed in all syllabi hereafter. Alignment of these course outcomes with program outcomes has started and will be refined over time using the results of annual assessments. Furthermore, program outcomes are being mapped onto the institutional principles of general education. This process includes review of links between the campus mission as a "student-centered research university" and the research opportunities and expectations afforded by campus programs. Across all schools and degree levels, the Center for Research on Teaching Excellence is supporting learning outcomes and assessment efforts through workshops and consultations.

Riverside: Testing and Other Learning Assessments

Riverside has been involved in significant assessment efforts. One is the piloting of the Collegiate Learning Assessment, a standardized test to measure student critical thinking, analytical reasoning, and written communications skills. The test and Riverside's experience with it to date are discussed in detail Section II of this report.

Also now underway is an initiative to clearly define, measure and evaluate learning outcomes both for general education requirements and for individual baccalaureate majors as well as graduate programs. As part of this effort, faculty participated in several seminars and workshops to guide outcomes development and identify assessment mechanisms. In November 2008, UCR held a Summit on Learning Outcomes and Assessment which was the official "call to action" for the College of Humanities, Arts, and Social Sciences (CHASS) and the College of Natural and Agricultural Sciences (CNAS). These two colleges have now developed outcomes for nearly all of their respective degree programs. Both outcomes and associated assessments go into a database—the Online Assessment Tracking System (OATS). Assessment specialists are reviewing and providing feedback based on the information generated from OATS. All programs will submit a multi-year assessment plan. For most, the first assessments will occur in 2009-10.

Assessment Project in UC San Diego's Department of Psychology

The Department of Psychology at UCSD is conducting an experiment to determine if it is feasible to assess the degree to which their students (with special emphasis on majors) have achieved mastery of a set of predetermined learning objectives through assessment of their mastery of these objectives within the context of regular course examinations. After agreeing on learning outcomes, based on those adopted by the American Psychological Association, faculty members are determining which courses are most likely to offer opportunities for mastery of the outcomes. Faculty are developing test items keyed to the desired outcomes to embed in end-of-term examinations. [*Appendix 7*]

UC Santa Barbara Support for Assessment Development

The Santa Barbara campus, through its Instructional Development program in the Office of Academic Programs, has sponsored events to focus attention on the benefits and challenges of assessment, and the campus has provided grants to assist faculty in implementing assessment activities. Instructional Development has hosted national experts in assessment, presented findings from pilot studies, sponsored discipline-specific presentations (e.g., Geology, Asian American Studies), and invited participation of faculty from other UC campuses. In addition, learning assessment figures prominently in the institutional proposal for campus accreditation review.

Student Learning and Reaccreditation at Santa Cruz
UCSC received its most recent reaffirmation of accreditation in 2005. At this juncture, the campus is embarking on preparations for the next reaccreditation cycle with articulation of educational objectives at the department level as an important focus. Administrators and faculty are actively engaged in activities to move this agenda forward. Both the Undergraduate Dean and members of the faculty participated in a system-wide student learning outcomes workshop held in November 2008. Already select departments engage students in summative learning experiences through capstone requirements for a written thesis or other project.

Pilots to Integrate Campus-wide Assessment Programs with ABET Evaluations in Engineering Programs at UC Berkeley and UCLA
At UCLA and Berkeley, the engineering undergraduate degree programs have developed elaborate procedures for satisfying ABET assessment requirements. The program learning outcomes are dictated by ABET, with flexibility to tailor them to the particular program. At UCLA every required course in the curriculum (and every course at Berkeley) is associated with a subset of the program learning outcomes and must provide evidence of student achievement of the learning outcomes. The course instructor devises specific assignments (e.g. final exam questions or projects) in order to evaluate student mastery of the learning outcomes and then provides suggestions for future improvement to the course. In addition, UCLA students fill out surveys giving their opinions as to how well they learned the course topics (as distinct from the learning outcomes).

At UCLA, undergraduate engineering programs require a capstone design course in which majors integrate the knowledge and skills they have acquired throughout the curriculum. Either the ABET assessment or UCLA's capstone assessment process can be used by the engineering programs to satisfy WASC assessment requirements. At Berkeley a CEE assessment pilot is annually assessing five courses. The instructor evaluates specific student learning outcomes demonstrated by selected course assignments (e.g., laboratory experiences, projects, and examination questions), and determines the extent of student mastery of the outcomes. All upper division courses will be included in the assessment process on a rotating basis. The UCLA and Berkeley experiences will hopefully provide examples of assessment that minimize the burden on faculty and staff resources and provide timely feedback to the programs for improving undergraduate education.

<u>Assessment Initiatives and Activities at Other Universities and Organizations</u>

University of Maryland – Program and Campus-wide Assessment
At the University of Maryland, goals for student learning have been established in nearly 400 programs and are available on a public website. In addition, UM faculty have written learning goals that span multiple common expectations for all UM undergraduates, including critical thinking and research skills, written and oral communication, science and quantitative reasoning, information literacy, and technological fluency. The campus also provides workshops tailored to the requestor's needs. Topics cover an overview of learning outcomes assessment and the campus process; establishing student learning outcome goals and objectives; methods for

assessing student learning outcomes; designing rubrics for evaluating student learning outcomes; and utilizing results of student learning outcomes assessment.
[https://www.irpa.umd.edu/Assessment/LearningOutcomes/]

University of Virginia – Using Rubrics for Assessment
The University of Virginia uses course assignments both for grading and for providing assessment of specific learning goals. The University designed an assessment template that uses rubrics to evaluate student assignments, including items such as papers, key exam questions, essays, or presentations, to measure student mastery of specific learning goals. The instructor applies the relevant rubrics for specific student learning outcomes to a student assignment, and the rubrics are used to assess four levels of competency for mastery of the skills and knowledge described in the learning goals. UVA also sponsored a pilot study of a software product that facilitates on-line interactive grading of student work using rubrics. The completed rubrics can be shared with students to provide detailed feedback on their work. In addition, they are automatically stored in a database, which can be used to aggregate and analyze the data in order to assess student learning. [http://www.web.virginia.edu/iaas/assessment/assessrubrics.htm]

Association of American Colleges and Universities
The Association of American Colleges and Universities (AAC&U) has long called for the academy to take responsibility for assessing the quality of student learning in college and has issues a number of reports on the subject. AAC&U has taken the approach that learning outcomes can be stated broadly, with departments and majors developing discipline-specific curriculum and assessment measures that can be aggregated into comprehensive statements about the institution's educational effectiveness. Their list of "essential learning outcomes" was developed by faculty from member institutions.

AAC&U supports the premise that while outcomes can be stated generally, they must be cultivated and assessed in context. They offer guidance for developing a comprehensive assessment framework and other aspects of the assessment process. Their VALUE Project (Valid Assessment of Learning in Undergraduate Education) reflects the philosophy of learning assessment that faculty evaluation of the quality of student work is more meaningful and reliable compared to standardized tests administered to samples of students outside of their required courses. [http://www.aacu.org/peerreview/pr-wi09/pr-wi09_index.cfm]

Western Association of Schools and Colleges
The University's regional accrediting body, the Western Association of Schools and Colleges (WASC), revised its standards in 2001 and 2008. Each time, among other changes made, there was increased emphasis on student learning and on institutional demonstration of educational effectiveness related to learning. Through its accreditation standards and criteria for review [*Appendix 8*], WASC requires the following:

- a system of measuring student learning;
- for baccalaureate programs, development of core learning abilities and competencies including, but not limited to, college-level written and oral communication; college-level quantitative skills; information literacy; and the habit of critical analysis of data and argument;

- clear statements of student learning outcomes and expectations for student attainment at the course, program and, as appropriate, institutional level;
- sharing of these outcomes and expectations widely and faculty assumption of collective responsibility for establishing, reviewing, fostering, and demonstrating the attainment of these expectations; and,
- systematic review of all institutional programs that includes analyses of the achievement of the program's learning objectives and outcomes.

At UC campuses, the faculty-driven process of developing learning goals for majors in each department is a valuable process for both faculty and students to think about the undergraduate program. Both faculty and students are finding the process to be useful: faculty appreciate the link between evaluation of student mastery and improvement of the undergraduate program; students appreciate how the learning goals reflect both the way in which the curriculum fits together and the higher-order skills and knowledge they are learning.

Observations and Lessons Learned To Date

On-going assessment programs provide guidelines for creating an effective and cost-efficient assessment process. These lessons are not fully developed rules and are offered as insights gained from experience. UC campuses are at different stages in developing department-level assessment programs, and campuses can learn from each other. UEETF supports exploring ways for the Academic Senate and UC Office of the President to facilitate this learning.

Experiences to date provide the following five guidelines for an assessment process that evaluates and improves undergraduate programs on an on-going basis:

- The process of developing and assessing learning goals should be discipline-specific (i.e., for majors), faculty-driven (i.e., developed and implemented by instructors), and owned by departments (i.e., not by campus administration).

    - Review of the department's assessment process should be a key element of the academic review of a department's undergraduate program.

    - Learning goals across departments include key higher educational goals, such as critical thinking, analytical reasoning, and written communication, as well as other discipline-appropriate skills and knowledge. The learning goals are taught differently according to the discipline, and students' mastery of many of the goals can be evaluated and measured within the context of the program curriculum. However, students' achievement of some goals, such as lifelong learning skills and using education to help society, are observed after they leave the university.

- The assessment process must be integrated into other evaluation activities, such as WASC and ABET, so that no department has more than one assessment process.

    - The approaches currently being developed at the UC campuses mesh well with the WASC evaluation of student learning outcomes.

    - The assessment process currently being undertaken for ABET could possibly be streamlined to be more effective as a tool for improving education while at the same time reducing the resources required.

- The process of assessing student learning outcomes should be embedded in the current curriculum in a way that uses existing resources and provides on-going feedback used to improve the undergraduate program.

    - Direct assessment of student learning outcomes requires evaluation of the overall skills and knowledge that majors achieve by the time they graduate. This can be accomplished with assessment of the learning achievements of advanced majors done periodically on a sample of assignments, such as papers, labs, projects, and exam questions that represent specific learning goals. Assessment can include evaluations of capstone assignments or evaluation of assignments in upper division courses on a rotating basis.

- Departments should put their learning goals materials on their web sites so that students, prospective students, and the interested public can learn more about what departments teach in their majors. For example, the web site can state learning goals, map these goals to the curriculum, explain how student learning outcomes are evaluated, and provide examples of student achievement of specific goals through assignments, such as papers, lab reports, problem sets, portfolios, exam questions.

- Assessment requires faculty input into the process at every stage, and the implicit cost of faculty time should be identified, estimated, recognized and supported. Also, evaluation and management of the assessment process requires knowing the resources required, including faculty and staff time, as well as the benefits, including innovations and improvements in undergraduate education and high (or improving) achievement in student learning outcomes.

    - Budget cuts for UC are impacting the ability of the assessment process to implement improvements in undergraduate programs. For example, capstone courses such as thesis seminars and lab-intensive courses are being cut or curtailed in order to teach large lecture and required courses. Implementation and evaluation of the assessment process must realistically take into account the teaching resources available to departments across campuses.

Overall, UEETF sees defining and assessing learning goals for majors and improving undergraduate curriculum as an on-going process, which each department uses to evaluate and improve its undergraduate program and which students use to understand and deepen their learning in the major. The assessment process is intimately linked to the improvement process because it is faculty driven, and faculty are in charge of and responsible for student learning.

Based on the information sharing and collaboration that is already taking place across UC campuses, UEETF thinks that UC system-wide groups, including the Academic Senate, have an

important role to play in supporting the assessment processes across campuses, especially in facilitating the sharing of learning goals materials and experiences across campuses and departments, both formally and informally.

Assessment of learning goals might be aggregated to the campus level with some willingness to aggregate different approaches to learning goals and different types of metrics. However, if these aggregations are made, they should remain specific to the campus and not be used as a comparison of student learning outcomes across campuses. To make such a comparison would require scientific development of a metric that is applied across all campuses and can be controlled for differences in the characteristics of the student bodies and for differences in instructional targets. Such a scientifically developed metric is not available and would be expensive to design and implement. If the University of California is interested in developing a metric that can be used across campuses, UEETF urges UCOP to invest in a carefully designed research and development project that requires all metrics meet specific requirements of validity, reliability, and connection to curriculum, as discussed above. The costs and time required for this type of research project would be large, as would be the costs of implementation. The benefits for undergraduate educational effectiveness relative to the costs of developing and implementing such a metric are not known.

The assessment of undergraduate student learning is part of a much larger picture of the experiences that UC students have and of the enduring value of their UC education and of demonstrating how well the UC system is doing in providing world-class education to California students at a reasonable cost to its citizens.

We discuss both the use of department-specific student learning outcomes and the use of other measures of student experiences and performance next in the Accountability section.

Section II: Accountability

UEETF takes a broad view of accountability and the university's obligation to demonstrate to the public the learning achievements of UC undergraduates and the educational effectiveness of UC. However, some proponents of accountability have pushed for a narrow approach that provides a single measure of student learning achievement. For this reason, in this section we provide an evaluation of national standardized tests as a method for learning assessment and accountability. Discussion follows on the use of student learning outcomes measurements from the assessment process as an accountability approach, and we then offer a description of other methods of conveying multidimensional information about student learning and achievement to the public.

Standardized Tests and Accountability

Summary: Accountability for undergraduate learning achievement requires providing information to the public that can be appropriately used to evaluate the University of California's performance in meeting its goals and mission in educating undergraduates. Accountability requires information that is simple for the public to understand, yet broad enough to provide meaningful measures of student experiences and performance, which include departmental

measures of student learning. Measures derived from national standardized tests fail to gauge adequately or to communicate meaningfully the learning that is achieved by UC undergraduates. Accountability related to student learning and achievements is best served by measures derived from the assessment process but includes many dimensions beyond this core. Accordingly, information about those other dimensions is also an important part of accountability to the public.

Recommendation:

5. Standardized tests to measure undergraduate learning, if used, must allow measurement of faculty-developed, curriculum-based learning goals, and the results should provide valid information that can be used to improve the department's instructional program. The learning goals evaluated by these tests should be appropriate to the major.

Some stakeholders, including government officials and business leaders, desire a single measure of overall student learning achievement to use for higher education accountability. A score on a standardized test of student learning outcomes is often touted as a metric that can be used to evaluate student learning achievement and to capture institutional "value added" to learning. By "value added," UEETF refers specifically to changes in a student's capabilities (e.g., critical thinking) attributable to instruction over the course of the student's undergraduate years.

Several standardized tests are available which purport to provide an overall score of student performance and value added for undergraduates at a given campus that can be compared to other universities, regardless of courses taken, major program selected, or university enrollment characteristics. One widely-used standardized test is the Collegiate Learning Assessment (CLA). The test claims to measure the institutional value added to students' generalized reasoning and learning skills by assessing samples of incoming freshmen and graduating seniors.

In order to evaluate how well this type of standardized test measures a campus' student learning performance and to what extent it can be used as a single measure of accountability, UEETF analyzed the CLA. Our analysis revealed strengths as well as many failings of this type of tool when employed for assessment and accountability purposes.

UEETF's review concluded that there is insufficient information available to demonstrate whether the CLA provides meaningful, valid, and reliable value-added information on student learning that can be compared across campuses. Many questions have been raised about the extent to which this test provides valid and reliable indices of value added (or other formulations of the consequences of college attendance), i.e. whether the CLA is psychometrically sound for the purposes of assessing change.[3] Questions also remain unanswered about what the CLA is actually measuring and the extent to which it evaluates learning beyond a minimal level of general abilities. UEETF is especially concerned that the CLA does not pass the important test of being a useful tool for improving undergraduate education, because the CLA is not linked to the

[3] Validity" concerns whether and to what degree there is evidence to support inferences based on test scores about what is being measured and about their use as a basis for making decisions. "Reliability" concerns whether and to what degree a test assigns numbers ("scores") to individual qualities in a stable and consistent manner.

undergraduate curriculum. UEETF remain unconvinced by arguments made by the CLA developers on these important questions (CAE, 2008, Klein et al., 2007, 2008).

Overview of the Collegiate Learning Assessment

The CLA was developed by Council for Aid to Education (CAE) with the RAND Corporation to provide a standardized measure of student skills in critical thinking, analytic reasoning or problem solving, and written communication. The test measures general abilities in these three areas rather than skills or knowledge that are based in disciplinary context. This factor substantially limits the usefulness of these types of tests, particularly with respect to value-added.

By administering the test to samples of incoming freshmen and graduating seniors with scores standardized for students' SAT exams, the CLA calculates a measure to indicate the *institution's* contribution or value added to student learning; the primary unit of analysis is the institution not the student. Tests are administered online and present problems that require students to analyze complex material and provide written responses (not multiple choice answers). The three-hour test has two 90-minute parts, Performance Task and Analytical Writing. Human raters use scoring guides to grade the students' answers online and computerized scoring is also used.

Under the CLA program, institutions typically test a sample of first year students in the fall and an independent sample of seniors in the spring. (Some institutions elect to conduct longitudinal analyses through repeated assessments of the same sample of students over time, provided they do not drop out, but it is a costly approach). The cross-sectional samples usually include 100 freshmen and 100 seniors. Students participate on a voluntary basis and are randomly assigned a sample of assessment tasks online by the program. Two reports are generated. The first report on the freshmen testing looks at how the entering class compares to CLA participants at other schools (adjusted for SAT or ACT scores). Then, after testing of seniors in the spring, a second report evaluates the school's value added, again on a comparative basis.

To adjust scores for pre-existing differences among students' academic abilities across campuses, a mean expected CLA score is computed for the freshmen and for seniors at the school. The expected values are based on (a) the general academic ability of the students prior to matriculation (as measured by SAT or ACT scores) and (b) the typical relationship between SAT or ACT scores and CLA scores across all colleges and universities participating in the CLA program. The difference between the means of how well the freshmen performed relative to the expected CLA score (i.e., residual freshmen score) and of how well the seniors performed relative to the expected CLA score (i.e., residual senior score) is standardized and treated as the institution's value added estimate. Finally, the three scores (residual freshmen score, residual senior score & value added estimate) are converted to percentile ranks and then performance levels are assigned. The percentile ranks and performance levels are used to compare student performance across institutions.

UC Riverside is the only UC campus that has used the CLA. Results are shown below as an example of how CLA scores are calculated. UC Riverside students performed "above expected value added" when a voluntary sample of 161 freshmen (fall 2005) was compared to a random sample of 92 seniors (spring 2006).

CLA tests results at UC Riverside 2005-6

	Freshmen	Seniors	Value Added
Mean SAT Score	1090	1066	--
Expected CLA Score	1104	1184	80
Actual CLA Score	1083	1219	136
Difference (actual - expected) *	-21	35	57
Difference (actual - expected) **	-0.40	0.80	1.20
Performance Level ***	At	At	Above Expected

*In scale score points. **In standard errors. ***Performance levels and percentile ranks are: Well above expected (90-99%), above expected (70-89%), at expected (30-69%), below expected (10-29%), and well below expected (0-9%).

Freshmen: Based on the average SAT score (1090) of freshmen sampled, the expected average CLA score was 1104, which is above the actual average CLA score of 1083 but is still *within the expected range ("At expected").*

Seniors: Based on the average SAT score (1066) of seniors sampled, the expected average CLA score was 1184, which is below the actual average CLA score of 1219, but is still *within the expected range ("At expected").*

Value Added: Based on the average SAT scores of freshmen and seniors sampled, the senior average CLA score is expected to be 80 points higher than the freshman average CLA score, and this difference is CLA's estimate of the expected value added at UC Riverside. In fact, the actual senior average CLA score was 136 points higher than the actual freshman average CLA score, which is *"Above expected value added"*.

Summary of UEETF Analysis of CLA

Research and analysis of the CLA, as it has been developed and used to date, can be summarized by five major concerns [*see Appendix 9*]:

- Concerns about usefulness of the scores
    - The nature of the scoring does not convey useful and rich information to the public about what students have learned.
    - Tests are not linked to the students' disciplines or courses of study, and so scores cannot be used to improve instruction.

- Concerns about validity
    - Description of the standards by which the test's tasks were developed is not provided.
    - The appropriateness of the selected "broad abilities" for scoring is only broadly justified and lacks a rigorous foundation.
    - Findings are not yet available on validity of inferences, especially with respect to instructional improvement.

- Concerns about reliability
    - Because the student samples are not scientifically representative, the results can vary considerably for an institution depending on the students in the sample.
    - Cross campus differences in sampling methods, differences in student populations, and other variables make comparisons across universities nonscientific and not comparable.

- Concerns about measures of "value added"
    - The measure of value added by an institution is developed as a comparison to other institutions; i.e., it is a relative rather than an absolute score of student achievement.
    - The value added measure does not discriminate between learning that might have occurred generally or as part of the maturation process from learning that occurred from coursework.

- Concerns related to test administration
    - Sampling methodology problems include variability due to demographic characteristics (e.g., academic disciplines, race/ethnicity/gender); stability of scores using a different senior population than those tested as freshmen; and differences in test versions across institutions.
    - Without clear reasons for taking the test, students may not be motivated to participate in the survey if requested, or to give their full effort to the three hour test.

Other Perspectives on the CLA

As with many controversial policies, advocates and critics have conflicting views about the value of standardized tests for assessment. Examples of varying pro and con points of view on the CLA can be found in articles and discussions published on the Inside Higher Education website [http://www.insidehighered.com; e.g., Lederman, 2006, 2008; Banta, 2007. Even colleges who have used and continue to use tests such as the CLA acknowledge that there are many known shortcomings and unknown potentially confounding factors. Moreover, some researchers, such as Banta [http://www.insidehighered.com/views/2007/01/26/banta], have concluded, "While

standardized tests can be helpful in initiating faculty conversations about assessment, our research casts serious doubt on the validity of using standardized tests of general intellectual skills for assessing individual students, then aggregating their scores for the purpose of comparing institutions".

Approximately 210 colleges and universities have used CLA since 2002. Since 2005, 30 members of the Council of Independent Colleges (CIC)/CLA Consortium have used CLA and sought to learn from their experiences [http://www.cic.org/projects_services/coops/cla.asp]. In a report, they describe their experiences as having been "challenging in some respects" and "progress has not always taken a straightforward path" (p. 2), yet they have an optimistic outlook, "Through their perseverance, the members of the consortium have begun to demonstrate that the CLA is an effective, helpful, and meaningful tool…" (p. 4). [http://www.cic.org/publications/books_reports/CLAreport.pdf]. In 2007, 47 members of CIC, none of whom are major research universities, extended and expanded the program to go through 2011 with two additional goals: to engage faculty more in the CLA process, and to pair CLA results with other assessment measures, such as NSSE student surveys or portfolio analysis. The addition of information beyond the CLA emphasizes the belief among CIC members that such information would provide more robust diagnostic information to use in targeting areas for improving instruction and student learning.

The California State Universities have been required to administer the CLA, and some campuses have challenged its usefulness. In March 2009, the Academic Senate of California State University, Chico, adopted a resolution that included:

> *Whereas*, Data generated by this assessment violates all minimum established thresholds of scientific validity; specifically the threats associated with Mortality, History, Maturation, Instrumentation, Regression, and Selection; and
>
> *Whereas*, With respect to degree programs, local campus assessment professions have been fully engaged in developing a unified effort to measure student learning outcomes expected by accrediting agencies, professional organizations, and the California legislature; and …
>
> *Resolved*, That the Academic Senate of California State University, Chico considers the Cross-Sectional Collegiate Learning Assessment to be an invalid means of determining the quality of a university education, and is therefore of no use in improving the quality of education; …

The full text of the resolution is available at the faculty senate website for CSU Chico. [http://www.csuchico.edu/fs/supporting_docs_as/Mar%2012,%202009/CLA%20Resolution%203-12-09.pdf]

In a statement regarding assessment of learning outcomes and use of such measures as a part of accountability, Association of American Colleges and Universities (AAC&U) provided a number of arguments against generalized testing and in favor of more disciplinary-specific methods, stating that "insights point toward a curricular strategy for educational accountability,

rather than a reliance on standardized and generic testing." [http://www.aacu.org/publications/pdfs/StudentsBestreport.pdf]

In a similar statement on the use of assessment in higher education, the Consortium on Financing Higher Education (COFHE), composed of private colleges and universities, stated its "commitment to self-evaluation" and advocated "locally-based, faculty-driven attempts to define and measure the skills and capacities that each institution emphasizes to meet its educational goals. This approach will be more meaningful, and ultimately more effective, than any nationally standardized test." [http://www.assessmentstatement.org/index_files/AssessmentStatement.pdf]

Conclusions About the Use of Standardized Tests for Assessment and Accountability

UEETF's analysis raised enough questions about the meaning, scope, reliability and validity of the CLA that UEETF could not endorse its use as a means of providing a metric of broad cognitive abilities that has potential for use in improving teaching and learning. At the simplest level, we note that the use of the CLA scores communicates nothing to the public about what students have learned. In addition, we have substantive concerns regarding reliability and validity of the CLA metrics, and the costs of the program. While the preceding discussion has centered on the CLA, we believe similar concerns extend to the use of "general education" tests developed by ACT (CAAP, Collegiate Assessment of Academic Proficiency) and the Educational Testing Service (MAPP, Measure of Academic Proficiency and Progress).

UEETF does not recommend the use of the CLA or similar tests as an accountability tool. However, campuses may decide to use standardized tests locally for program improvement purposes, provided such tests can be validly tied to locally-developed learning outcomes that are incorporated into the curriculum. UEETF does not think that UC campuses should be required or encouraged to use standardized tests such as the CLA. UEETF questions their value when used in parallel with other forms of evaluation because of the inappropriate and illusory independence of the assessment from subject matter knowledge, along with the relatively poor evidence of what the scores demonstrate and how the scores can appropriately be used.

UEETF thinks that any generalized statements about student achievement for accountability purposes must be grounded in the departmental assessments described earlier. We recognize that this approach requires faculty development of evaluation metrics at the departmental/program levels, and that these metrics are not developed to be compared across programs, departments or universities. Nevertheless, we think that the ongoing assessment at the department/program level across UC campuses is a superior approach that provides rich and valuable information on student learning, and which can be conveyed in useful forms to the public for accountability purposes as well as used by departments to improve undergraduate education.

Next we explore how to link the locally-derived, faculty-developed assessment process and its metrics to public statements of accountability.

Educational Effectiveness and Institutional Accountability: Measuring Learning Outcomes

Summary: Educational effectiveness requires using discipline-specific assessment results as the primary indicator of student learning outcomes for accountability, along with broader measures of student experiences and performance.

Recommendations:

6. Campuses should publicly communicate evidence of student and campus educational achievements through relevant information sources, including information on every department's learning assessment program. The information should be user-friendly and available on the UC Undergraduate Campus Profiles websites which should have links to the departmental assessment programs. Information on the learning goals, the evaluation process, and measurement of majors' achievement of these goals should be included in the public information about the departmental assessment programs.

7. Campuses should consider developing methods of aggregating measures of students' achievement of departmental learning goals into meaningful, comprehensive public statements about overall undergraduates' learning achievement. Development and reporting of such aggregated measures is sufficiently complex that campuses should be supported in this effort by UCOP, the system-wide Academic Senate, and campus administrators (e.g., Undergraduate Deans).

Providing institutional accountability through simple transparent measures of institutional performance and using assessment of department's student learning outcomes to improve undergraduate education are distinct activities and responsibilities. With this distinction in mind, measures from department-level assessments of student learning outcomes can provide the primary accountability information to demonstrate undergraduate student learning. These learning outcomes, along with the broader measures of student performance currently available in the Campus Profiles and UCOP Accountability Framework Report, should be used to indicate UC's educational effectiveness to the public.

Linking Locally-Derived Assessment Measures with Institutional Accountability

Our suggestions of how measures of learning outcomes can be used for institutional accountability are based on the assessment programs at the UC campuses. In particular, we look at how the direct assessment measures being developed at the department-level (and integrated into WASC and ABET), can be used for accountability purposes.

UEETF recommends that the measures of student learning used for accountability be developed within the context of a discipline, as discussed above. Therefore, no single metric of student achievement can be compared across different departments, campuses or systems. The innate and inescapable heterogeneity of discipline structure, content, and instructional delivery; the heterogeneity of students in majors and across campuses; and the heterogeneity of institutional missions and characteristics prohibit a meaningful standardized approach to assessment of

student learning outcomes. The proper assessment of learning outcomes requires the ability to determine how students respond to a particular curriculum and the ability of that information to modify the instructional program and its delivery.

However, UC campuses have the potential to develop indicators of campus-level learning outcomes, based on department-level assessments of student learning outcomes, and these campus-level indicators can provide valuable metrics for accountability. UEETF encourages campuses, in their ongoing development of department-level assessment programs, to explore ways in which these discipline-specific measures can be aggregated or otherwise summarized into succinct compelling public statements that convey the essence of student learning achievement at that campus.

To our knowledge, no model exists that can be used directly by the UC campuses to aggregate discipline-specific direct assessments of student learning outcomes. Although common higher-learning goals are being assessed across departments on a campus and across campuses, the actual way that the goals are manifested varies across disciplines (and even campuses). The measurement of the mastery of a specific goal (e.g., critical thinking or written communication) has its own characteristics depending on the discipline, and the measurements of student learning are not directly comparable. To aggregate the student learning outcomes across a campus requires the aggregation of different rubrics and different ways of presenting the same skill. Although a method of aggregation can be developed with care and creativity, the interpretation of campus aggregated measures must be done in a way that correctly reflects the diversity of the discipline-specific outcome measures being combined.

The system-wide Academic Senate, especially through the University Committee on Education Policy (UCEP), and the UC Office of the President can facilitate the development of campus-level aggregated measures. They can support these efforts directly with brainstorming meetings and exchange of information across campuses and indirectly with resources to allow such exchanges to occur. Work of Divisional Academic Senates and campus administrators such as Undergraduate Deans would also benefit from system-wide support. On-going resources will also be required for the actual calculation of aggregate measures and the reporting of results to the public.

In addition, UEETF recommends that each UC campus communicate to the public their departments' measurements of student achievement. This communication can be accomplished in a user-friendly way using the Campus Profiles (discussed below). Profiles can direct the public to departmental descriptions of learning goals as well as assessment processes and can provide measures of student achievement of goals through examples of student work.

In particular, UEETF recommends that departments develop meaningful metrics for higher-order learning goals, such as critical thinking skills, analytical reasoning, and written communication, with these goals being customized to fit each department. There should be the explicit recognition that at UC these higher-order skills are taught within a discipline-specific context. Public information on departmental assessment processes and student learning outcomes will show interested stakeholders what the learning goals are for majors in each department, how the majors' performance is assessed, and to what extent majors are achieving the learning goals. A

critical benefit of this approach is that this department-level assessment process is linked to on-going curriculum improvements, which is used in the review of academic programs and is being incorporated by WASC into their accreditation reviews of campuses.

The aspiration of some stakeholders to compare student performance across different campuses or universities presents a complex problem that may not have a solution that allows an unbiased or meaningful comparison. Indeed, a growing chorus of experts finds the problem insoluble, even while appreciating current attempts. UEETF does not think that a valid and reliable metric of student performance or a scientifically developed value added metric of such learning (i.e., similar to what the Collegiate Learning Assessment and other approaches claim to measure) is feasible. Although UEETF members appreciate the simplicity and power that a single metric of the university's value added would provide, responsible accountability requires that such a metric pass the scientific requirements of any metric used by the research community. Because we believe (1) that advanced education and learning, such as practiced at the University of California, is discipline-specific, and (2) that student learning outcomes reflect the instructional program as well as the characteristics of the students and the resources available, UEETF recommends that accountability measures be program- and campus-specific.

Using a Broad Range of Information for Accountability

Summary: Accountability for UC's educational effectiveness must include information on student experiences and performance outside the classroom. A complete picture of student learning requires a broad array of information, including student and alumni surveys and other information already available.

Recommendations:

8. Because the value of a university education is made manifest in contributions over the graduates' lifetimes, full assessment of the effectiveness of a UC undergraduate education must include information about what those graduates contribute to their families, communities, and workplaces. UEETF supports the development of a UC exit and alumni survey across campuses.

9. Campus assessment and accountability activities should include the broad array of information on student and campus achievement provided by existing reports, such as the University of California Undergraduate Experience Survey (UCUES), the Campus Profiles, and the University's Accountability Framework. UC should continue to collect information about the overall undergraduate experience to augment information derived from departmentally-based assessments.

Institutional accountability of educational effectiveness must include information on student experiences and performance outside the classroom, where undergraduates also learn and prepare to contribute in their families, communities and work places. A rich and complete picture of student learning requires a multidimensional array of information, which complements and expands the student learning outcome assessments. UEETF thinks that UC accountability to the public must include multiple indicators that permit evaluation of the goals and mission of the UC

system, and below we look at three existing or recommended sets of public information that provide insight into educational effectiveness: 1) Current Reports to the Public; 2) Undergraduate Perceptions of Their Educational Experiences (UCUES); and 3) Perceptions of Graduating Senior and Alumni.

Current Reports to the Public

A vast array of information for accountability is currently provided to various stakeholders of the University of California and is publicly available. This information includes reports in response to: federal agencies, the California State Legislature, and state agencies; UC Regents and campus organizations; professional associations and accrediting agencies; private foundations; news organizations, including college guide books; ad hoc requests for information from state and national commissions, task groups, and committees; and individual requests from prospective students and parents. In addition each campus collects and reports various data related to educational effectiveness to support academic program reviews and internal resource allocation and decision-making processes.

Here we briefly describe two main sources of public information as they relate to Educational Effectiveness: UC Campus Profiles and UC Accountability Framework. Both sources draw upon the UC undergraduate survey (UCUES, described below) and on the Common Data Set (CDS), which UC campuses publish on their web sites. CDS includes data on enrollment, graduation rates, and degrees conferred. [*Appendix 10*] An example of the Common Data Set can be found at http://planning.ucsc.edu/irps/OFFICE/cds_2008-09.pdf.

UC Undergraduate Campus Profiles

In response to national efforts of public universities to improve public understanding of their goals and activities, each UC campus has created a Campus Profile that is substantially similar in appearance and content to the Voluntary System of Accountability's (VSA) College Portraits [*Appendix 11 provides links to each UC campus profile*]. Because VSA requires that standardized test scores (e.g., CLA) be used to report student learning outcomes and because UC campuses plan on reporting discipline-specific learning outcomes instead of standardized test scores, UC does not participate in VSA [*Appendix 12*].

Following VSA, the Campus Profiles report data on student experience and perceptions, including some items related to learning outcomes. UC Profiles also include other information of interest to prospective students and their parents that are not required by VSA. Examples of the information on the Profiles include:

- undergraduate demographic profile (gender, race/ethnicity, geographic distribution, age)
- admissions and cost-of-attendance information
- retention rates and time to degree
- undergraduate research opportunities
- graduate education
- the research enterprise
- distinguished faculty

In a section on "Other Student Learning Outcomes," the Campus Profiles report student self-perceptions in various skills as a freshman and as a senior from the UCUES survey. The Profiles typically report results on the following skills and abilities:

- critical thinking skills
- ability to write clearly and effectively
- understanding a specific field of study
- quantitative skills
- understanding of international perspectives
- leadership skills
- interpersonal skills
- self awareness

Each campus provides information on activities in assessing learning goals and other educational effectiveness information. Several campuses have links to their undergraduate student learning initiatives, department assessments of student learning, and WASC accreditation reports. As department-level assessment information becomes available, UEETF recommends that campuses post links to this information.

Information from the Graduating Senior Surveys and Alumni Surveys (see section below) will be added to the UC Profiles when available. UEETF recommends that campuses continue to use the Campus Profiles as the primary site for providing the public with information about student learning achievements, including links to department's assessment information.

UC Accountability Framework

The Accountability Framework (AF) was initiated by President Yudof and presented to the Board of Regents in September 2008. The introduction states the purpose of the AF:

> "The framework measures campus and University wide performance in meeting key research, teaching, public service and other goals. It includes an annual report that takes a broad look at access and affordability, student success, research impact and funding, faculty diversity and quality, and other issues. In addition, the framework will include periodic sub-reports that bring specific areas more sharply into focus. Together these reports — all of them made public via the World Wide Web and distributed in printed form to the Board of Regents, the California Legislature and state officials — will provide a clear look at the University that will be used to support:
>
> - ✓ transparency and public accountability;
> - ✓ strategic planning and decision making;
> - ✓ budgeting, including budget trade-off decisions; and
> - ✓ management performance evaluation.
>
> In these regards and for these reasons, it is one of the highest priorities of University President Mark Yudof and the University of California Board of Regents." [http://www.universityofcalifornia.edu/accountability/]

The report includes over 100 measures of performance for the UC system and for each campus. Data over time and comparisons with UC's eight peer campuses (Harvard, Stanford, Yale, MIT, Michigan, Virginia, Illinois, and Buffalo) are also provided when available. AF indicators related to undergraduates include information on [http://www.universityofcalifornia.edu/accountability/]

- undergraduate success
- undergraduate student experience
- undergraduate affordability
- undergraduate access
- undergraduate student profile

Undergraduate success measures include retention/graduation rates, degrees awarded, degree aspirations and post-graduation plans of graduating seniors. Undergraduate Student Experience measures provide UCUES results for seniors that are identical to those listed in the Campus Profiles.

The Accountability Framework acknowledges the limitations of the data and intercampus comparisons. Campus comparisons of measures of student success, such as graduation rates or time to degree, may be useful to the public. However, as discussed above, campus' discipline-level assessments of student learning outcomes are not comparable across campuses because of the considerable differences in program mix, student bodies, assessment definitions and practices.

Undergraduates' Perceptions of Their Educational Experience

With the advancement of on-line surveys, and the standardization of survey instruments and administration, campuses now collect and follow student behavior and perceptions from the time of application to several years (or more) after graduation. The UC system began in the mid-1990s to administer enrolled student surveys and alumni surveys across all UC campuses. The success of these efforts led to the development of the UC Undergraduate Experience Survey (UCUES), which is part of the Student Experience in the Research University (SERU) Project initiated in 2002 [http://cshe.berkeley.edu/research/seru/]. SERU's goal is to create information that broadens our understanding of the undergraduate experience and promotes a culture of institutional self-improvement, and creates a group of researchers to study the survey results [http://cshe.berkeley.edu/research/seru/summary.htm]. Although longitudinal research is still fairly limited, major advances in research on changes in UC student perceptions and behaviors will likely occur in the next few years. Integration of student learning outcomes with student perceptions of the educational experience will also be possible.

UCUES is administered on-line at all UC campuses to all undergraduates in the spring every other year and on some campuses every year. Response rates range from 30% to 50%. All students complete the core items and 20-30% of the respondents are randomly selected to complete additional items or modules related to academic engagement, civic engagement, student development, student services, and optional items (wild card module). The core module includes items related to the students' perceptions of their level of proficiency on various skills and abilities when they started at the campus and currently (e.g., analytical and critical thinking skills, ability to appreciate the fine arts); satisfaction with various aspects of the educational

experience; participation in various academic activities (e.g., assist faculty in research for pay, make classroom presentations, frequency in going to class unprepared); and use of time (e.g. hours spent studying).

Several campuses provide their UCUES results on the web [*Appendix 13*]. In addition, the UC Campus Profiles and the Accountability Framework report UCUES results for seniors in:

- group learning experiences
- active learning experiences
- perceptions of institutional commitment to student learning and success
- overall student satisfaction
- experiences with diverse groups of people and ideas
- interactions with faculty and staff.

UCUES provides important information to the campuses and the public on UC undergraduate experiences. UEETF encourages UC campus institutional research offices, research centers, and faculty to continue to conduct analytical studies that integrate data from student surveys, assessment of student learning outcomes, and other academic and non-cognitive measurements.

Alumni's Perceptions of Their Educational Experience

Another important part of assessing the value of an undergraduate education is learning what our graduates do in graduate education, in their jobs and in their contributions to their families and to society. Surveys of undergraduates as they go off to the next stage in their lives, as well as what they are doing in five and ten years, is an important part of assessing the value of their undergraduate education at UC.

Almost all UC campuses administer a graduating senior or career destination survey on an annual basis [*Appendix 14*]. These surveys tend to be career-oriented and are administered by the campus' Career Center. They are focused on placement activities rather than student experiences and outcomes. Some UC campuses survey their alumni beyond the first year of graduation. Most alumni surveys are either conducted by individual departments or colleges or by the Alumni Association. Many Colleges of Engineering survey their alumni as part of the ABET accreditation requirements. Many Alumni Associations survey the alumni to receive feedback on marketing and services offered by the Association and typically do not include measures of student learning outcomes or satisfaction items related to their undergraduate experiences.

In 2007, the Association of American University (AAU) presidents and chancellors unanimously approved a resolution calling for AAU institutions to administer a graduating senior survey and an alumni survey to measure student perceptions and outcomes. AAU developed prototype surveys with the goal of promoting comparable data collection across institutions from seniors on their college experience and their immediate post-graduation plans, and to track alumni into their future careers (every five years).

UEETF supports the AAU recommendation that campuses develop an alumni survey that incorporates a set of core items that would allow comparisons across the UC campuses and

among the AAU campuses, and that would be administered immediately upon graduation and after graduation (e.g., 5 years and 10 years post-graduation). UEETF supports the work of the UC system-wide Postgraduate Outcomes Task Force, which may serve as advisory committee to the development of a UC alumni survey by making recommendations for content, survey process and overall data management and administration.

The Path Ahead

Summary: Undergirding all the recommendations in this report is the firm belief that learning assessment is a responsibility of the UC faculty, who are strongly committed to communicating information about undergraduate learning achievements to the public. Because assessment should be part of the instructional process, department-level assessment must be on-going, regardless of the state budgetary climate. Faculty are supported by administrative resources in delivering instruction and must receive required administrative support for assessment activities as well.

Recommendation:

10. Given its responsibilities for curriculum and admissions matters, the Academic Senate must continue to be a key player in any activities to develop assessment of and accountability for undergraduate education system-wide.

The campus-level assessment programs being implemented at UC campuses are a critical process for ensuring educational effectiveness, and that the resulting measures of student learning outcomes are a critical component of accountability to the public of the achievements of UC undergraduates. UEETF believes that accountability can be linked to faculty-driven assessment to inform the public and to improve undergraduate instruction. The recommended "UC Way to Educational Effectiveness" will benefit the University system, the state government, and the citizens of California.

APPENDICES

APPENDICES

1. Educational Effectiveness Task Force (EETF) – charge and roster
2. External Reports & Materials Reviewed – list of references
3. Accountability Measures: Major Users and Forms
4. Assessment Initiatives and Activities at UC Berkeley
5. Student Learning in the Major Initiative at UC Irvine
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10. Common Data Set – Background
11. UC Undergraduate Campus Profiles links
12. Voluntary System of Accountability – letter from President Dynes to University of Maryland President and VSA Presidential Advisory Committee Chair Kirwan, November 9, 2007
13. Websites for UC UCUES Reporting
14. Dates and Websites for UC Graduating Senior/Career Destination & Alumni Surveys

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Charge to Undergraduate Educational Effectiveness Task Force

Reporting to the Undergraduate Education Planning Group, a subcommittee of the Academic Planning Council, the Undergraduate Education Effectiveness Task Force is charged with providing guidance to campuses, particularly academic departments, on ways of developing and communicating learning objectives and student achievement of those objectives. This charge derives from the enduring value of UC's academic culture for quality assurance; from President Dynes' commitment to include in other accountability measures being developed for UC campuses "student learning information that the public can use to evaluate our educational quality;" and from WASC requirements that expect information on learning outcomes, in a departmental context.

The UEPG believes the locus for educational assessment is the faculty, at the department level, and that the program review process may be the best structure for incorporating explicit expectations and evaluations of student learning. UEPG's charge to the Task force, within these assumptions, is to provide guidance to faculty that will allow the University to describe for its undergraduate students, their families and interested citizens what specific learning objectives are and what constitutes successful learning in specific courses of study.

- The Task Force shall recommend from best practices it discovers at UC and other institutions effective tools, resources and examples of undergraduate learning expectations and assessment measures that meet UC's standards of academic quality.
- The Task Force shall recommend ways of using existing practices and structures, such as the program review process, to incorporate explicit learning expectations and assessment measures.
- The Task Force shall suggest ways that divisional Academic Senates, department chairs and Deans might effectively incorporate its recommendations.

Membership shall include department chairs, evaluation specialists, faculty and administrators with experience and commitment to assessing student learning across a range of disciplines, and at least one member of the Undergraduate Education Planning Group. This task force is complementary to the Postgraduate Outcomes Task Force that will concurrently work on developing methods for outcome assessment of educational effectiveness based on the work, activities and accomplishments of UC graduates.

It is expected that the Task Force shall produce its recommendations in easily and widely accessible format, such as web sites. Its work should be completed within the 2008-09 academic year unless its membership finds that the scope of work makes it necessary to extend that deadline.

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Accountabilty Measures: Major Users and Forms

	Voluntary System of Acc'ty (VSA)	UC Accountability Framework	learning outcomes measures	Common Data Set	financial statements	misc state/fed reports
Prospective Students / Parents	* * * * *	* *	* * *	* * *		*
Current Students / Parents	* *	* *	* * *	* *		*
Campus Faculty	* *	* *	* * * * *	*	*	* *
Academic Senate	* *	* * *	* * * * *	* *	* *	*
Campus Administrators	* * * *	* * * * *	* * * * *	* * *	* * * * *	* * *
Staff	* *	* * *	* * *	* * *	* * *	*
Alumni / Donors	* * *	* * *	* * *	* * *	*	*
Office of the President	* * * *	* * * * *	* * * * *	* * * *	* * * * *	* * * * *
Regents	* * * *	* * * * *	* * * *	* *	* * * * *	* * * * *
Accrediting Agencies (e.g., WASC)	*****	* * * *	* * * * *	*****	* * * * *	* * * * *
Financial Auditors	*	* *	*	* * * *	* * * * *	* * * * *
Professional Associations (e.g., AAU)	* * * *	* * * *	* * * *	* * *	* * *	* * * * *
State / Local Government / Legislature	* * * * *	* * * * *	* * * *	* *	* * * *	* * * * *
Congress / Executive Branch	* * * * *	* * * *	* * * *	* * * *	* * * *	* * * * *
State / National Commissions	* *	* * * *	* * * *	* *	* *	* * * * *
Centers/ Institutes	* * *	* * *	* * *	* * *	* * *	* * * *
Non-Campus Faculty (research)	* * *	* * *	* * *	* * *	* * *	* * * *
Press-Rankings / Publishing Guides	* * * *	* * * *	* * *	* * * * *	* * * *	* * *
Press - (General)	* * *	* * * *	* * *	* * *	* * *	* * *
Voters / Citizens	* *	* *	* *	* *	*	* * *

Assessment Initiatives and Activities at UC Berkeley

UC Berkeley has developed various assessment procedures related to student outcomes. The primary assessment program for undergraduate learning is the Undergraduate Student Learning Initiative (USLI). This program is integrated with Berkeley's on-going Academic Program Reviews and WASC accreditation process. Additional information about Berkeley's undergraduate program and student achievements can be found in the Berkeley Profile and in UCOP's Accountability Framework. Below we describe these assessment initiatives and activities in detail, and then we provided detailed examples of the Learning Goals Assessment in four departments (Chemistry, Civil Engineering, Economics, and French).

Undergraduate Student Learning Initiative (USLI) at UC Berkeley

http://opa.berkeley.edu/academicprograms/USLIIndex.aspx

Berkeley's Undergraduate Student Learning Initiative (USLI) is a campus-wide initiative to support departments in establishing educational goals and evaluation procedures for all undergraduate programs. In 2007-09 each department developed learning goals for its undergraduate majors, linked the goals to its curriculum, and posted information online stating the purpose of the major and what graduating seniors are expected to know or to be able to do at the end of their course of study. In 2009-10 departments will develop and implement pilots for assessing specific learning goals in selected courses. The USLI is in keeping with the fundamental principle at Berkeley that the evaluation of student achievement should be locally defined, discipline specific, and faculty driven. Defining and assessing Learning Goals for majors and improving undergraduate curriculum is an on-going process and a critical part of the academic program review.

Senate-Administration Leadership

Oversight is provided by a joint Academic Senate-Administration faculty advisory committee, co-chaired by Academic Senate Committee on Educational Policy Representative and Professor of Economics Clair Brown and Vice Provost for Teaching and Learning and Professor of Psychology Christina Maslach. The Faculty Advisory Committee helps the Academic Senate Divisional Council (DIVCO) and the administration set overall policy and goals for the initiative, advises on implementation actions, and provides specific feedback to departments on their learning goals and assessment plans as they are developed. The Office of Teaching and Learning provides support to departments in their USLI efforts through workshops and personalized assistance by a dedicated expert staff member.

Key Milestones

- A joint Academic Senate-Administration Task Force recommends that assessment of undergraduate student learning be part of academic program review. (September 2006)
- DIVCO passes a resolution calling for all departments to establish learning goals and assessment procedures. (June 2007)

- The Western Association of Schools and Colleges (WASC) asks the campus to create a model for evaluation of student learning at a research university and to demonstrate evidence of progress by November 2009.
- By Spring 2009, over 85% of the 70 departments and non-departmental undergraduate programs had submitted documentation of learning goals with the others in progress.
- In Summer 2009, departments will post on their websites their undergraduate student learning goals and a description of how they are achieved through the curriculum.

Next Step: Developing Assessment Procedures
The USLI advisory committee has identified the following criteria to guide the assessment phase of the initiative:

- embed assessment in the current curriculum in a way that uses existing resources;
- integrate efforts with professional accreditation assessment activities for those departments that have them (e.g. Engineering disciplines) so that no department has more than one assessment process;
- link review of departmental learning goals and how well they are being achieved to the campus's regular academic program review process to institutionalize the goal of improving undergraduate programs over time.

Direct assessment of undergraduate programs focuses on the *overall skills and knowledge that majors have achieved* by the time they graduate. Assessment efforts will focus on a sample of upper division majors, rather than the assessment of individual students' work as they progress through each of their courses.

We are encouraging departments to begin by piloting small-scale assessment efforts, so that we can begin to discover what works for us as a campus. Here is a brief summary of four department pilots, all of which are in process. Details of the USLI programs programs in these four departments are provided below.

Chemistry

http://chemistry.berkeley.edu/student_info/USLI/

Undergraduate learning in chemistry can be viewed as a cumulative, spiral process as majors advance through the program, with junior- and senior-level courses building on the fundamentals learned in the first two years. Chemistry is exploring an assessment model that incorporates a research-level exercise in upper-division laboratory courses for all majors. Using Chemistry 108 as an example, the following summary describes how these fundamental competencies will be assessed. Note that a holistic approach is taken to the overall assessment; we do not consider it practical, or desirable, to establish a rubric for gauging progress in each individual competence with a single measure. Instead, a series of markers spread across sections of the students' reports will frame groups of competencies, as described below. Basic competence in five learning goals, including knowledge-based competence and basic lab procedures, will be tested early in the course using introductory experiments, the aim of which is to teach students fundamental

techniques in synthetic inorganic chemistry. Using the *Chemistry 108 Laboratory Report Assessment*, these competencies can be assessed by scores in the *Introduction, Experimental Procedure, Discussion,* and *References* sections. More complex experiments will be tackled in the last half of the semester, which require mastery of the following learning goals:
2. Solve problems competently by identifying the essential parts of a problem and formulating a strategy for solving the problem.
5. Understand the objective of the chemical experiment, properly carry out the experiment, and appropriately record and analyze the results.
8. Communicate the concepts and results of their laboratory experiments through effective writing and oral communication skills.
These will be assessed in particular in the *Results and Data, Discussion* (2 and 5), and *Spelling & Style* (8) sections of the report assessment rubric developed (see web site). At a minimum, students will be expected to demonstrate mastery at the level of *Acceptable* in competence areas 1-8 on at least one report. Note that deficient reports may be re-submitted after suitable revision following consultation with the instructor(s).

Civil and Environmental Engineering

http://www.ce.berkeley.edu/undergrad/ugrad_initiative.php

Maintaining ABET accreditation requires a continual assessment of student learning and documentation of how that assessment was used to improve the curriculum. To test an alternative to the current requirement that each instructor provide information each semester on student performance based on assignments, examinations, and student evaluations, CEE will assess selected courses in the upper division curriculum on a rotating basis. This assessment will be undertaken by the Curriculum Committee, which will pick approximately five courses each year to evaluate how student learning objectives identified by the instructors for each course are achieved through homework assignments, laboratory experiences, projects, and examinations. This schedule will cover the whole of the upper division curriculum over the six year cycle of accreditation and will fit in well with campus departmental review cycles. The goal of this pilot process is to find an alternative to a process devised for ABET that is less burdensome on faculty and staff resources and is more timely in providing the department with an assessment on our achievement of desired learning outcomes.

Economics

http://emlab.berkeley.edu/econ/ugrad/ugrad_goals.shtml

In Spring 2009, Economics implemented an assessment pilot that evaluated specific exam questions or written assignments in three selected upper division courses, where the question or assignment had been designated as representing student performance in specific learning goals. Econ did this for three learning goals: critical thinking and written communication (in popular upper division elective), analytical reasoning (in required quantitative methods course), and written communication (in large pilot course that

focuses on writing a short research paper). Note that the outcome does not indicate what students learned in the particular course but is a measure of their cumulative learning.

The instructor in each courses designated a grade that demonstrates the minimal mastery expected of Economics majors for the specific learning goal in the assignment. The grades for these assignments were recorded separately along with the distribution of the grades and the minimum grade required to demonstrate proficiency for the goal(s). Given the grade distribution by student SID, the department can sort out our majors (from other students) and also sort out our graduating seniors.

The Learning Goals Committee, with input from the Undergraduate Committee and from the instructors who executed the assessment in the three courses, will assess the value of this pilot as a direct measurement of majors' performance and its value in evaluating and improving undergraduate program. Economics will decide how to revise the pilot and use it to develop an on-going assessment process of upper division courses on a rotating basis. We will also explore how to put selected examples of student work from each of these assessment pilots online to show our majors' educational performance and achievement of Economics learning goals.

French

http://french.berkeley.edu/undergrad/USLI.php

The French Department will offer each semester one or two classes designated as writing-intensive (with a specific focus on improving students' abilities in composition and critical analysis) and one or two others designated as research-oriented (with specific emphasis on crafting research topics and acquiring bibliographical skills). These "research" and "writing"-emphasis designations are not permanently attached to particular courses but can rotate to courses throughout the upper division curriculum. The French Department is developing a pilot portfolio assessment in these special emphasis courses to assess majors' achievement of specific learning goals. Portfolio assessment might then be applied to other courses to determine how well the Department's learning goals are being met generally. The Department is also planning to develop a survey that will ask seniors and recent graduates to reflect on their learning in French.

Summary

UC Berkeley is pleased with the progress our departments and programs have made in developing learning goals for their majors. In less than two years, almost all of our undergraduate programs have developed well-articulated learning goals for their majors and have mapped these goals to their curricula. Key campus stakeholders will have easy access to these program-level learning goals via a gateway website that will launch in Summer 2009. We are now turning our attention to the assessment component of the initiative. Programs are working on plans for small-scale evaluation pilots that can be implemented in 2009-10 within the current resource environment. These pilots will provide programs with important information about how well their majors are achieving key learning goals, with a particular focus on higher level skills (e.g. critical thinking,

analytical reasoning, oral/written communication) as they are practiced in a discipline-specific context. We anticipate that the assessment process will be scaled gradually and used to improve undergraduate programs over time. In addition, we have taken important steps to ensure that the goals of the learning goals initiative will be institutionalized in the long-term through the campus's regular academic program review process, as well as through our process for approving new degree programs. We will continue to keep key stakeholders informed about our students' mastery of learning goals and their educational achievements via the Berkeley Profile and other key public websites.

Academic Program Reviews

http://vpapf.chance.berkeley.edu/apr/index.html

The Academic Program Review is designed to enhance the educational mission of the University of California, Berkeley, by providing opportunities for programs and departments, and the university as a whole, to assess and improve its teaching and scholarship. Evaluation of student outcomes is an important component of the program reviews.

The campus conducts 7-9 program reviews each year with a goal of conducting a review of each every eight years. As part of the review process (http://vpapf.chance.berkeley.edu/apr/guide/guide_instructional_09.pdf), the department is asked to conduct a self study addressing a number of questions. Among the questions related to undergraduate student outcomes are:

> 1) What are the goals or objectives of your undergraduate program (for majors, minors, and non-majors), e.g., as submitted for the Undergraduate Student Learning Initiative? How do you communicate information about your learning goals to your majors and potential majors? How do your specific program requirements and courses help students achieve these goals? Can majors elect from a number of subfields?
>
> 2) What constitutes "quality" in undergraduate education in your field? How does your unit assess the quality of your undergraduate program and student outcomes? How does your undergraduate program compare with similar programs a equivalent top-ranked institutions in terms of mission, curriculum, and requirements? What is the unit doing currently to improve its performance?
>
> 3) What opportunities are available for your majors for a capstone experience, such as participation in a research project or writing a senior thesis? What proportion of majors complete a capstone experience? How many faculty sponsor independent research projects? How are faculty recognized for directing undergraduate research projects? Does anyone monitor the quality of Independent Studies courses? What are you doing to teach undergraduates to write in the discipline?

4) How are undergraduates advised, both academic advising during their undergraduate years and advising about career and graduate training opportunities after graduation? To what extent and how are faculty involved in advising undergraduates?

5) If time to graduation is longer than desired, what actions are being taken to ensure that students graduate in a timely manner?

Prior to the department's development of their self study, the Office of Planning and Analysis prepares a narrative of the quantitative and qualitative about the unit. The summary includes information the goals and objectives of the undergraduate major, curriculum offerings, time-to-degree for undergraduates, student satisfaction and self-perceptions of their skills (e.g., critical thinking), and student placement and activities after graduation.

Accreditation

http://education.berkeley.edu/accreditation/

UC Berkeley was reaccredited by the Western Association of Colleges and Schools (WASC) in 2004. In our Institutional Proposal to WASC, we identified three broad areas for investigation in the Educational Effectiveness Review: (1) enhancing academic engagement at a large public research university; (2) rethinking the delivery of education; and (3) improving undergraduate program review. In addition various academic programs on campus undergo further accreditation. Many of these accreditation efforts include assessments of student learning outcomes. (e.g. Accreditation Board for Engineering and Technology (ABET) http://www.eecs.berkeley.edu/education/usli/prep.shtml.

UC Berkeley Undergraduate Profile

http://metrics.vcbf.berkeley.edu/Berkeley%20Template.pdf)

By our yardstick, UC Berkeley is about the best thing for America we can find. It's good by all of our measuremen s."

—
Washington Monthly

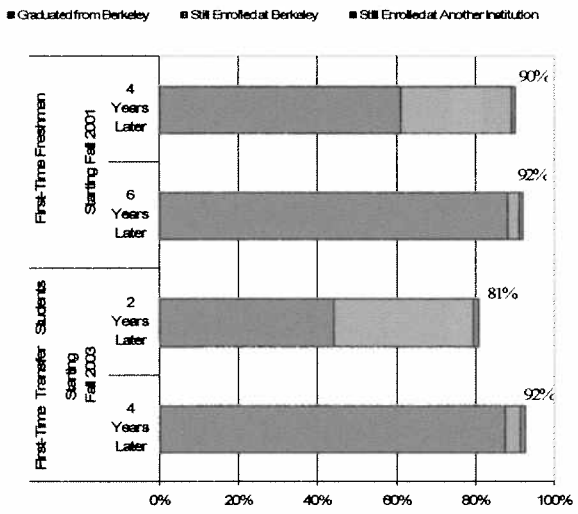
The UC Berkeley Undergraduate Profile provides important information to prospective students and their parents to help in their selection of a college. It is also provides relevant information to various stakeholders such as legislatures and the public. The profile is similar to the College Portraits for those campuses participating in the Association of Public and Land-Grant Universities (APLU) Voluntary System of Accountability. Below is a sampling of information included the UC Berkeley Undergraduate Profile:

Program Offering

The ultimate value of a Berkeley undergraduate education is the impact it has on the intellectual and personal lives of students. With offering 108 different undergraduate programs, the unparalleled Berkeley campus environment reinforces people's connections to one another, and Berkeley research, teaching, and service chart ways for students to give back to society and change the world. (http://opa.berkeley.edu/academicprograms/acadprog.htm)

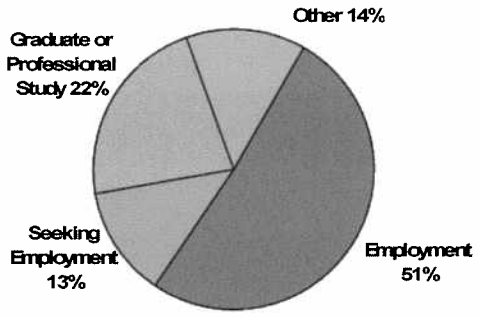
Student Success

UC Berkeley ranks among the highest public universities with a 6-year freshmen graduation rate of 90%. The average time-to-degree is 4.02 years and 2.01 years for transfers (http://metrics.vcbf.berkeley.edu/Berkeley%20Template.pdf)



Placement

Approximately half of UC Berkeley's baccalaureate degree recipients are employed upon graduation, while approximately 25% are enrolled in a graduate or professional studies program.



Source: https://career.berkeley.edu/CarDest/CarDest.stm

Student Satisfaction and Skill Development

Each year, the Berkeley campus asks all undergraduate students to complete the University of California Undergraduate Experience Survey (UCUES). As the name implies, the UCES survey asks students to reflect and comment upon all aspects of the undergraduate experience including student satisfaction and the development of their skills in various areas (http://ucues.berkeley.edu/main/). Students express very high satisfaction with their education and improvements in their skills:

Student Satisfaction

92% were satisfied with the value of their education for the price they paid

95% were satisfied with their overall academic experience

94% seniors would choose to attend this institution again

93% of seniors reported that their campus had a strong commitment to undergraduate education

Accountability Framework

http://www.universityofcalifornia.edu/accountability/

In addition to the Undergraduate Profile, the UC Office of the President publishes a variety of statistics and information about Berkeley and the other UC campuses including information on student outcomes. In addition, each campus provides a narrative summary that provides additional information about the campus. Berkeley included a special section on undergraduate student experience (http://opa.berkeley.edu/stratplan/AccountabilityProfile.pdf0.

Upper Division Laboratory Courses as an Assessment Tool in Chemistry

One piece of our assessment plan is to engage students in research-level exercises in our upper division laboratory courses (Chemistry 105, 108, and 115). The aim is to use these courses to examine the set of fundamental competencies (knowledge-based, performance/skills-based, and affective) detailed in our USLI outcomes and assessment document and summarized below.

Knowledge-Based Competence

1. *Master a broad set of chemical knowledge concerning the fundamentals in the basic areas of the discipline (organic, inorganic, analytical, physical and biological chemistry).*

2. *Solve problems competently by identifying the essential parts of a problem and formulating a strategy for solving the problem. They will be able to rationally estimate the solution to a problem, apply appropriate techniques to arrive at a solution, test the correctness of the solution, and interpret their results.*

3. *Use computers in data acquisition and processing and use available software as a tool in data analysis.*

4. *Employ modern library search tools to locate and retrieve scientific information about a topic, chemical, chemical technique, or an issue relating to chemistry.*

Performance/Skills-Based

5. *Understand the objective of their chemical experiments, properly carry out the experiments, and appropriately record and analyze the results.*

6. *Use standard laboratory equipment, modern instrumentation, and classical techniques to carry out experiments.*

7. *Know and follow the proper procedures and regulations for safe handling and use of chemicals.*

8. *Communicate the concepts and results of their laboratory experiments through effective writing and oral communication skills.*

Affective

9. *Successfully pursue their career objectives in advanced education in professional and/or graduate schools, in a scientific career in government or industry, in a teaching career in the school systems, or in a related career following graduation.*

Using Chemistry 108 as an example, the following summary describes how these fundamental competencies will be assessed. Note that a holistic approach is taken to the overall assessment; we do not consider it practical – or desirable – to establish a rubric for gauging progress in each individual competence with a single measure. Instead, a series of markers spread across sections of the students' reports will frame groups of competencies, as described below.

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Basic competence in areas 1, 3, 4, 6, and 7 will be tested early in the course using introductory experiments, the aim of which is to teach students fundamental techniques in synthetic inorganic chemistry. Using the *Chemistry 108 Laboratory Report Assessment* (see below), these competencies can be assessed by scores in the *Introduction, Experimental Procedure, Discussion,* and *References* sections.

More complex experiments will be tackled in the last half of the semester, where competencies 2, 5, and 8 will come to the fore. These will be assessed in particular in the *Results and Data, Discussion* (2 and 5), and *Spelling & Style* (8) sections of the report assessment rubric.

The last competence (9) cannot be assessed directly at this level; however, during lectures and presentations in the course, the subject of career options is discussed.

At a minimum, students will be expected to demonstrate mastery at the level of *Acceptable* in competence areas 1-8 on at least one report. Note that deficient reports may be re-submitted after suitable revision following consultation with the instructor(s).

APPENDIX 4

Chemistry 108 Laboratory Report Assessment

Experiment Title: _____ Name: _____ Date: _____

	Requires Significant Improvement	Needs Some Improvement	Acceptable	Excellent	Score (max)
Introduction	Very little background information provided or information is incorrect	Some introductory information, but still missing some major points	Introduction is nearly complete, missing some minor points	Introduction complete and well-written; provides all necessary background principles for the experiment	(10)
Experimental procedure	Missing several important experimental details or not written in paragraph format	Written in paragraph format, still missing some important experimental details	Written in paragraph format, important experimental details are covered, some minor details missing	Well-written in paragraph format, all experimental details are covered	(15)
Results: data, figures, analysis, etc.	Figures, graphs, tables contain errors or are poorly constructed, have missing titles, captions or numbers, units missing or incorrect, etc. Spectroscopic data not (or poorly) analyzed	Most figures, graphs, tables OK, some still missing some important or required features. Data analysis needs attention	All figures, graphs, tables are correctly drawn, but some have minor problems or could still be improved. Data analyzed well, but with some errors	All figures, graphs, tables are correctly drawn, are numbered and contain titles/captions. Spectroscopic data analyzed fully and accurately	(15)
Discussion	Very incomplete or incorrect interpretation of trends and comparison of data indicating a lack of understanding of results	Some of the results have been correctly interpreted and discussed; partial but incomplete understanding of results is still evident	Almost all of the results have been correctly interpreted and discussed, only minor improvements are needed	All important trends and data comparisons have been interpreted correctly and discussed, good understanding of results is conveyed	(15)
Conclusions	Conclusions missing or missing the important points	Conclusions regarding major points are drawn, but many are misstated, indicating a lack of understanding	All important conclusions have been drawn, could be better stated	All important conclusions have been clearly made, student shows good understanding	(5)
Spelling, grammar, sentence structure. Style	Frequent grammar and/or spelling errors, writing style is rough and immature. Not in ACS style	Occasional grammar/spelling errors, generally readable with some rough spots in writing style	Less than 3 grammar/spelling errors, mature, readable style	All grammar/spelling correct and very well-written in ACS style	(5)
Appearance and formatting	Sections out of order, too much handwritten copy, sloppy formatting	Sections in order, contains the minimum allowable amount of handwritten copy, formatting is rough but readable	All sections in order, formatting generally good but could still be improved	All sections in order, well-formatted, very readable	(5)
Referencing	No references given	A few references provided, but not appropriate and/or timely	Good coverage	Pertinent references to important concepts, covering historical and up-to-date citations	(10)
Samples	No samples handed in	Low yields; impure	Good yields of reasonably pure compounds	Excellent (in comparison to literature) yields of pure compounds	(20)
Self-Assessment					
Instructor Comments					

Score: /100

June 5, 2009
Revised June 17, 2009

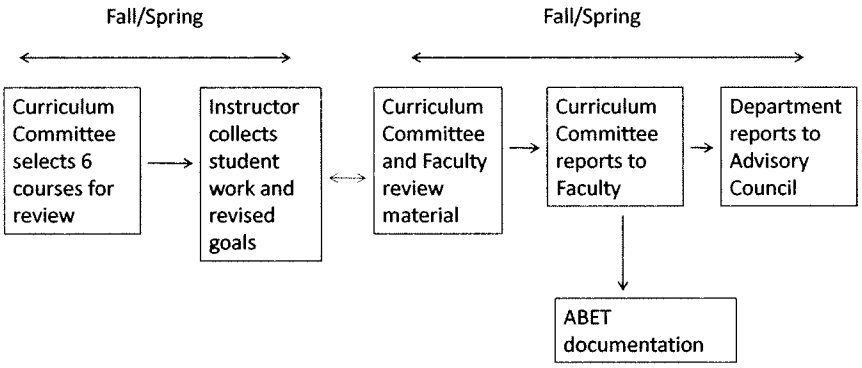
Civil and Environmental Engineering Pilot Effort for the Undergraduate Student Learning Initiative

The Department of Civil and Environmental Engineering has prepared its response to the Undergraduate Student Learning Initiative and it is available on the departmental website (http://www.ce.berkeley.edu/undergrad/ugrad_initiative.php). The Department is making every effort to coordinate this initiative with a methodology that accomplishes a self-assessment methodology for external ABET accreditation. A small-scale pilot effort was initiated in 2008-2009 to better understand the process and the mechanics of implementation.

For 2008-2009 the Department's Curriculum Committee undertook a review of six upper division design courses. The undergraduate major requires the students to select one design course that provides an integration of material covered in prior undergraduate courses and applies that material to actual engineering problems. The level of integration ranges from very detailed application of specific analysis tools in structural engineering design to a broad coverage of all civil and environmental engineering sub-disciplines in projects initiated by student teams. Team work, written reports, and oral presentations are essential components of each design course. The Curriculum Committee received outlines and project descriptions from instructors and reviewed these with faculty members in charge of the courses. There was not sufficient prior notice for the faculty to collect student work from these design courses. The Curriculum Committee noted that courses taught by lecturers provide an important professional context to the courses, but there needed to be continued faculty oversight to monitor the level of work and the coverage of necessary education goals.

Based on this pilot test, the Curriculum Committee is initiating an assessment process summarized in the following flow chart where the Curriculum Committee chooses four to six courses from required or technical elective CEE courses each year for review. The faculty member in charge of each course documents how learning goals for the course were achieved. The course instructor will also discuss what minimum student performance is required to demonstrate the achievement of course goals The committee will review with the course instructor course goals and survey representative homework assignments, laboratory experiences, projects and examinations that demonstrate the achievement of those goals. This process feeds back to the instructors and provides for an overall assessment of the curriculum on a continuing basis. The Curriculum Committee will report annually on its deliberations to the faculty and to the Advisory Council. The documentation developed in this internal review and will form the basis for future ABET accreditation visits that occur on a six-year cycle.

APPENDIX 4



Lisa Alvarez-Cohen, Chair of Civil and Environmental Engineering
James Hunt, ABET Coordinator

Learning Goals for Economics Majors
(Draft in process; this is a living document, Spring 2009)

Economics is the study of how people make choices under conditions of scarcity and the results of those choices for society. Limited resources make tradeoffs necessary for consumers, businesses, and nations. Microeconomics studies how consumers make choices in using their time and spending their income, and how businesses make choices in producing and selling goods and services. Macroeconomics studies the determination of national income, and how it deviates from its potential (full employment) over the business cycle. The important outcomes for the national economy are income and how it is distributed, unemployment, inflation, economic growth, and how well financial markets and international trade are functioning. Economic is important in studying the impact of government policies, ranging from regulatory activities in individual markets to general measures for stabilizing and steering the economy at large. The effect of alternative economic policies on the welfare of the population is a core concern in economics.

Undergraduates should have the following knowledge and skills when they graduate with an Economics Major from UC Berkeley. The Economics Department wants our majors to have knowledge of economics principles with the skills to apply this knowledge in the following ways:

I. Critical Thinking Skills

CT1. Apply economic analysis to evaluate everyday problems.
CT2. Apply economic analysis to evaluate specific policy proposals.
CT3. Compare two or more arguments that have different conclusions to a specific issue or problem.
CT4. Understand the role of assumptions in arguments.

II. Quantitative Reasoning Skills

QT1. Understand how to use empirical evidence to evaluate an economic argument.
QT2. Interpret statistical results.
QT3. Conduct appropriate statistical analysis of data, and explain the statistical problems involved.
QT4. Obtain and/or collect relevant data using specific qualitative and/or quantitative research methods.

III. Problem-Solving Skills

PS1. Solve problems that have clear solutions.
PS2. Propose solutions for problems that do not have clear answers, and indicate under what conditions they may be viable solutions.

IV. Specialized Knowledge and Application of Skills

SP1. In specific content areas (fields) of economics, develop deeper critical and quantitative thinking skills and apply problem-solving skills to complex problems.

V. Communication Skills

CS1. Communicate effectively in written, spoken, and graphical form about specific economic issues.
CS2. Formulate a well-organized written argument that states assumptions and hypotheses, which are supported by evidence.
CS3. Present an economic argument orally.

VI. Lifelong Learning Skills

LL1. Possess a working knowledge of information data bases (e.g., Econ Lit, Nexis-Lexis)
LL2. Know how to locate and use primary data sources (e.g., BLS Household Survey, UN Human Development Index)
LL3. Understand and evaluate current economic events and new economic ideas.

A matrix that shows how majors achieve mastery of the learning goals in the core courses and upper division electives is provided in the appendix below.

Assessment of Learning Goals
(pilots for Spring and Fall 2009)

Mapping Learning Goals to Courses

Each semester instructors of undergraduate courses state on the syllabus the most important learning goals that students develop in the course. The department collects the syllabi and updates the learning goals matrix each semester. The Undergraduate Committee annually reviews the learning goals for courses to ensure consistency and to evaluate how well the curriculum provides adequate opportunity for majors to achieve mastery of all learning goals before graduation.

Pilot Course to Teach Written Communication Skills

In Spring 2009, a pilot course (Econ 196, Topics in Economic Research) was developed and offered to provide upper division students with the opportunity to develop written communication skills in Economics. Econ 196 accommodated approximately 150 students. The course consists of 45 hours of lectures, and students have required weekly readings, from which they choose two topics to write two short papers (12-15 pages). The readings and lectures focus on recent research and policy developments in public finance, labor economics, game theory, experimental economics, behavioral economics, international economics and economic development. The course has a lead instructor, who organizes lectures given by fifteen faculty members in the Economics department, who volunteer their time. The core objective is to expose students to different aspects of research in economics and how it influences policy, and to provide majors with the opportunity to write two papers in economics. Students are assisted in

writing their papers by two graduate student tutors who grade the papers.

Pilot to Directly Assess Specific Learning Goals

In Spring 2009, Economics implemented an assessment pilot that evaluated specific exam questions or written assignments in three selected upper division courses, where a question or assignment had been designated as representing student performance in specific learning goals. Econ did this for three learning goals: critical thinking (in a popular upper division elective), analytical reasoning (in a required quantitative methods course), and written communication (in a large pilot course that focuses on writing a short research paper). Note that the outcome does not indicate what students learned in the particular course but is a measure of their cumulative learning.

The instructor in each course designated a grade that demonstrates the minimal mastery expected of Economics majors for the specific learning goal in the assignment. The grades for these assignments were recorded separately along with the distribution of the grades and the minimum grade required to demonstrate proficiency for the goal(s). Given the grade distribution by student SID, the department can sort out our majors (from other students) and also sort out our graduating seniors.

The Learning Goals Committee, with input from the Undergraduate Committee and from the instructors who executed the assessment in the three courses, will assess the value of this pilot as a direct measurement of majors' performance and its value in evaluating and improving the undergraduate program. Economics will decide how to revise the pilot and use it to develop an on-going assessment process of upper division courses on a rotating basis. We will also explore how to put selected examples of student work from each of these assessment pilots online to show our majors' educational performance and achievement of Economics learning goals.

APPENDIX 4

Appendix. Learning Goals for Core Courses

Learning Goals for Core Courses	1	Calculus	Statistics	Micro Theory		Macro Theory		Econometrics	
				100A	101A	100B	101B	140	141
Critical Thinking Skills									
CT1: Understand everyday economics problems	X			X	X	X	X		
CT2: Use economic theory to understand and evaluate policy proposals	X			X	X	X	X		
CT3: Compare arguments				X	X	X	X		
CT4: Role of assumptions		X	X	X	X	X	X	X	X
Quantitative Skills									
QT1: Understand the role of empirical evidence in evaluating economic problems								X	X
QT2: Interpret results			X					X	X
QT3: Conduct statistical analysis			X					X	X
QT4: Gather or obtain research data								X	
Problem Solving Skills									
PS1: Solve problems with clear solution	X	X	X	X	X	X	X		
PS2: Solve problems without clear answer									
Specialized knowledge in fields									
SP1: Specialized knowledge in fields									
Communication Skills									
CS1: Communicate effectively about economic issues	X			X	X	X	X		
CS2: Formulate and support written argument									
CS3: Oral presentation									
Lifelong Learning Skills									
LL1: Information databases									
LL2: Primary data Sources	X			X	X	X	X		
LL3: Understand economic news	X			X	X	X	X		

APPENDIX 4

Learning Goals for Upper Division Courses

Learning Goals for Upper Division Electives	Upper Division Courses														
	103	105	115	121	122	123	124	142	151	161	162	173	C175	C181	196
Critical Thinking Skills															
CT1: Understand everyday economics problems	X		X	X	X				X	X	X		X		
CT2: Use economic theory to understand and evaluate policy proposals	X		X	X	X					X	X			X	
CT3: Compare arguments	X	X	X		X	X			X	X	X	X		X	X
CT4: Role of assumptions		X	X	X	X	X			X	X	X	X		X	X
Quantitative Skills															
QT1: Understand the role of empirical evidence in evaluating economic problems					X	X		X	X		X	X	X		X
QT2: Interpret results					X	X		X	X		X	X	X		X
QT3: Conduct statistical analysis								X				X			
QT4: Gather or obtain research data												X	X		
Problem Solving Skills															
PS1: Solve problems with clear solution			X			X		X	X	X	X			X	
PS2: Solve problems without clear answer			X					X	X		X			X	
Specialized knowledge in fields															
SP1: Specialized knowledge in fields			X				X	X	X		X			X	
Communication Skills															
CS1: Communicate effectively about economic issues		X			X		X	X	X	X		X	X	X	X
CS2: Formulate and support written argument		X			X		X	X	X			X	X		X
CS3: Oral presentation					X		X					X			
Lifelong Learning Skills															
LL1: Information databases															
LL2: Primary data Sources												X	X		
LL3: Understand economic news		X							X	X	X	X		X	

USLI in French Department
Spring 2009 (in progress)

The French Department faculty has articulated learning goals in the French major and suggested pathways to reach those goals. In connection with these goals and pathways, a system of course designation has been introduced to our current major curriculum. These learning goals and the ways to reach them are described in sections I (Learning Goals) and II (Path(s) to Learning Goals) . The two types of courses, which are designed to help students 1) focus on their writing skills and 2) develop research skills in French literature and culture, are described in section III (Writing-Intensive and Research-Oriented Courses).

These adjustments do not constitute additional requirements to the French major: they simply articulate the coherency of the course sequence of our existing program.

I -- Learning Goals for the French Program:
The faculty in French have articulated these learning goals so that all of our undergraduate majors may better understand what they can learn in their French courses and how they can learn it. It is our hope that this statement of learning goals will not only make our students more aware of what is expected of them, but also more capable of making the best of our program as it now stands.

In the detailed outline below, you will find a copy of the goals that the French Department faculty agreed upon in June 2008. These goals distinguish knowledge (i.e. content) from skills (i.e. specific know-how) and describe what we would like all of our undergraduates in the French major to know and be able to do when they leave the French program.

II – Path(s) to Learning Goals in the French Program:
The detailed outline below also contains a recommended sequence of classes (that we have labeled "path(s) to goals") that indicates where in the French major program we expect you will best be able to master the various types of knowledge and skills we hope all of our graduating seniors will possess.

This lay-out of existing classes in French should help you in planning the sequence of classes in our upper division course offerings that will be most beneficial to your learning. We encourage you to study it carefully and to use it, in conjunction with the counseling provided by our staff undergraduate advisor, Carol Dolcini, to map out an academic itinerary that will insure that you acquire the knowledge and skills highlighted in our learning goals.

III – Writing-Intensive and Research-Oriented Courses in the French Program:
Each semester, on a rotating basis, one or two classes in French upper division course offerings will be designated as writing-intensive (with specific emphasis on grammar and composition skills) and one or two others will be designated as research-oriented (with specific emphasis on crafting research topics and acquiring bibliographical skills).

Writing-Intensive Courses

These courses are labeled "W" in our on-line departmental course listings and will offer students the opportunity to perfect composition skills in French and to acquire knowledge in French literature and culture. Writing assignments in these classes will be progressive (from 2-3 pages to 10 pages or more), promote peer-editing, offer ample opportunities for rewrite and emphasize coherency in argument as well as grammatical skills in French.

In the Fall 2008 semester, in addition to all sections of French 102 ("Writing in French"), Professor Sanyal's French 103A ("Itinéraires du désir") and Professor Blocker's French 117A ("Gens de lettres et gens du monde en France au XVIIe siècle") will be taught as "W" courses.

In the Spring 2009 semester, in addition to all sections of French 102 ("Writing in French"), Professor Smock's French 120A ("Twentieth Century and Contemporary French Literature") will be taught as a "W" course.

Research-Oriented Courses

These courses are labeled "R" in our on-line departmental course listings and will be taught as introductions to research in French literature and culture. In these courses, professors will work with students to help them learn how to design a research topic. They will also show them how to find books and articles related to their research, how to read, use and cite this material in their papers, and how to design a bibliography on a given subject.

In the Fall 2008 semester, Professor Maslan's French 121B ("Themes, Genres and Structures : French Theater") and Professor Blocker's French 161A ("Quatre années dans l'histoire littéraire de la France, 1656-1659") will be taught as "R" courses.

In the Spring 2009 semester, Professor Britto's French 185 ("Literature and Colonialism" and Professor Blocker's French 140B ("The Crafting of the French Philosopher: from Montaigne to Sartre") will be taught as "R" courses.

We strongly recommend that all students in the French major use this new labeling to select their classes according to the type of skills they need to perfect or develop. *As a rule of thumb, it is suggested that students take an additional "W" class in the major sequence (beyond the mandatory French 102 class) before enrolling in an "R" class.* In addition, students planning to write an honors thesis in French are strongly advised to complete a class labeled "R" prior to enrolling in the Honors sequence (French H195A-H195B.) Finally, it is highly recommended that any student planning to continue their studies at the graduate level (in French or any other discipline) take at least one class labeled "R" before graduating.

We hope that these newly articulated learning objectives and course designations ("W" and "R") will help you excel in our upper division French classes, while making it easier

for you to acquire the knowledge and skills that will accompany you throughout your life in the career(s) you will engage in.

Learning Goals in French

Knowledge

- Attain solid (though not flawless) proficiency in reading, writing, understanding, and speaking French.
- Possess some understanding of the history and sociology of the French language.
- Be aware of a variety of ways in which the histories of French and Francophone literature and culture have traditionally been accounted for within French studies.
- Recognize and understand features of a variety of genres and modes in French and Francophone writing (the novel, poetic forms, short fiction, autobiography, film, etc.), as well as of the vocabulary commonly used to describe them (i.e. narratology, vocabulary of versification or of film studies, etc.).
- Have some familiarity with key rhetorical terms.
- Acquire a basic familiarity with some of the techniques of cultural analysis within French and Francophone studies.
- Be able to articulate specific connections between texts and cultural, artistic, social, and/or political contexts
- Gain an understanding of literature and of other written texts in interdisciplinary and multicultural contexts.
- Be aware of debates about the nature of literature.
- Be widely read in French literature.

Skills

- Develop the ability to interpret and analyze any given text from the French and Francophone domains using a variety of methods, both in isolation and together (such as close reading, linguistic analysis, theoretical analysis, historical and cultural contextualization, etc.)
- Be capable of interpreting culture and cultural artifacts in the French and Francophone domains.
- Formulate a well-organized, well-supported argument both orally and in writing.
- Write essays in standard academic French, using appropriate vocabulary whenever needed to discuss precise examples in specific texts.
- Begin to acquire independent research skills on a given topic or text and know how to make use of secondary sources (for instance: know how to read and analyze a scholarly article or how to compile a bibliography).
- Observe ethical, precise and accurate citation practices in both oral and written work.

Pilot Assessment Planned

The French Department will offer each semester one or two classes designated as writing-intensive (with a specific focus on improving students' abilities in composition and critical analysis) and one or two others designated as research-oriented (with specific emphasis on crafting research topics and acquiring bibliographical skills). These "research" and "writing"-emphasis designations are not permanently attached to particular courses but can rotate to courses throughout the upper division curriculum. The French Department is developing a pilot portfolio assessment in these special emphasis courses to assess majors' achievement of specific learning goals. Portfolio assessment might then be applied to other courses to determine how well the Department's learning goals are being met generally. The Department is also planning to develop a survey that will ask seniors and recent graduates to reflect on their learning in French.

Student Learning in the Major Initiative at UC Irvine

UC Irvine has developed a multi-year plan to assist faculty and staff to identify and assess learning outcomes in the undergraduate majors and to use the results to strengthen student learning. The campus-wide initiative, called the "Student Learning in the Major," was launched in 2008 and focuses on helping departments identify and assess student learning outcomes for each undergraduate major. The Division of Undergraduate Education (DUE) has taken the lead through its Office of Research & Evaluation (R&E). As part of the initiative, each department was required to provide a progress report by December 2008, on the status of where they are in the process of developing learning goals and a plan for assessing whether graduating majors were meeting those goals. Toward that end, DUE and Academic Affairs has sponsored two rounds of assessment grants to provide one-time funds of up to $10,000 to support Senate faculty to guide their department toward establishing assessment programs for their major.

Here are two examples of two pilots:

Chemistry faculty have identified and itemized a list of student learning outcomes that is desired of all graduating chemistry majors. They have identified the individual courses within the curriculum that develop those outcomes and have aligned course learning outcomes with program learning outcomes. Also, by collaborating with Network and Academic Computing Services, they have set up a system to collect student work products (exams, lab reports, term papers, etc.) in electronic format and saved in virtual spaces as portfolios for instructor (or student) reflection and for development of valid rubrics for assessment of learning outcomes. Portfolios from a random sample of juniors and seniors will be examined and evaluated using the rubrics. Finally, as part of the department's ongoing assessment plan, a departmental Assessment Committee will be formed to analyze and summarize assessment data and communicate recommendations on how the major could be strengthened to the Chemistry faculty.

Writing instructors have launched a pilot to assess upper-division writing. The three goals for the assessment project were to develop a scoring rubric that could be used to assess writing skills and techniques across academic disciplines, to assess the quality of student writing produced in upper-division writing courses, and to determine whether such student characteristics as first language and transfer vs. high school status impact the quality of student writing. Because the upper-division writing requirement can be fulfilled through a wide array of courses designed and offered by individual academic schools, the rubric for this pilot assessment needed to be broad enough in scope to capture writing skills and techniques that exist across disciplines. Six writing elements emerged as relevant to writing across disciplines; (1) mechanics (grammar, punctuation, etc.), (2) source usage mechanics, (3) organization and structure, (4) audience, (5) familiarity with disciplinary discourse, and (6) critical thinking/analysis. The six writing elements that emerged through the review process appear as four categories within the Upper-Division Writing Assessment Rubric: critical thinking and analysis, use of evidence/research, development and structure, and generic and disciplinary conventions. Four levels of quality, (0) little or no evidence, (1) some evidence, (2) good, and (3) mastery, were defined for each of the writing rubric's writing categories. A random selection of papers from two upper-division writing courses were collected for use in this pilot assessment study and assessed by six readers, with extensive writing instruction experience.

Use of Capstones for Assessment at UCLA

For its ongoing WASC Review, UCLA chose as one of the three themes, "Shaping Undergraduate Education via the Capstone Experience." Capstone experiences provide students the opportunity to demonstrate mastery and integration of knowledge and learned abilities within a discipline. UCLA has identified five criteria that define a capstone experience. Major programs that require all students to take a capstone course are certified as "capstone majors."

Capstone Criteria:

1. The project must require that the student engage in a creative, inquiry-based learning experience that deepens the student's knowledge and integration of the discipline.
2. The project may be completed individually or by a group of peers, provided each student is given agency; each student's contribution must be significant, identifiable, and graded.
3. The project must culminate in a tangible product that can be archived (including film, video, etc.) for at least three years by the responsible unit (department or program).
4. The project must be part of an upper-division course or courses totaling at least four units, usually within the curriculum established for the student's major or minor.
5. Opportunities should be provided for capstones to be shared within a broader community, such as presenting papers at a student forum, posting projects on the web, giving a performance or arranging an exhibit, etc.

Since capstones typically draw broadly on, and bring into focus, the learning outcomes for academic programs, UCLA decided to align its capstone initiative with the articulation of programmatic learning outcomes. Moreover, we recognized that assessing students' capstone performances also serves usefully as a diagnostic for a program, facilitating the process of curricular review and reform within academic units that have capstones. Therefore, *we require departments applying for capstone certification to establish learning outcomes and associated assessment approaches related to capstone experiences.*

UCLA's experience with the first group of capstone majors revealed that departmental faculty can benefit greatly from assistance in articulating learning outcomes and framing their assessment. A document (*Guidelines for Developing and Assessing Student Learning Outcomes for Undergraduate Majors*, currently in draft form) has been written to provide such guidance for *all* majors, whether capstone or not. For capstone majors in particular, the *Guidelines* document provides explicit guidance with the following steps:

- establishing learning outcomes,
- creating an assessment plan that revolves around the capstone project and will support student attainment of those outcomes,
- evaluating capstone products for evidence of student learning,
- reflecting on how assessment findings may inform pedagogical practice and/or curricular planning,
- determining the effectiveness and limitations of the assessment process,
- communicating findings and associated implications with those who are involved with the program, and
- incorporating discussion of the assessment process and findings within the Academic Senate Program Review process.

Further assistance will be provided to departments beyond the *Guidelines* document; the Center for Educational Assessment and the Office of Instructional Development will work with faculty to set up an appropriate assessment plan and schedule. Departments will receive this help two to three years before their self-review report is due for the Academic Senate Program Review process.

This Appendix draws on documents written by UCLA's Capstone Workgroup and individuals in the office of the Vice Provost for Undergraduate Education.

Assessment Project in UC San Diego's Department of Psychology

At UCSD's Department of Psychology we are conducting an experiment to determine if it is feasible to assess the degree to which our students (with special emphasis on majors) have achieved mastery of a set of predetermined learning objectives through assessment of their mastery of these objectives within the context of regular course examinations. The full description of the process has previously been described and is included in the current documentation of this committee. The key elements, briefly described, are:

1. Determine a set of learning outcomes that are agreed upon by the unit.
2. Determine a set of courses for each agreed upon learning outcome that are highly likely to offer the opportunities for mastery of the specified outcome.
3. Create a set of items (including multiple choice, short answer, essay, etc.) that can be used in regularly scheduled, end of term examinations. These items must be such that they can be directly linked to the learning outcome in the sense that it is highly unlikely that the question would be answered incorrectly if the learning objective had been mastered.
4. Have the faculty member(s) responsible for the course select a set of items that are associated with one or more learning outcome associated with that course (see step 2 above) and are content appropriate to the course to be embedded in final examination,.
5. Amass results from repeated testing sessions and estimate the percent of students for each learning objective who fail to demonstrate mastery of the learning objective.
6. Utilize the results of Step 5 for feedback to the undergraduate studies committee in order to plan revisions to the curriculum.

As of January 1, 2009 the Psychology Department has:

1. Agreed to conduct the experiment.
2. Has adopted a formal set of Learning Outcomes (the American Psychological Associations guidelines)
3. The Learning Objectives are being posted to the Department's Website (in the Undergraduate Education section) as a public statement of the Department's commitment to these Learning Outcomes.
4. Begun the prioritizing of the order in which the Learning Objectives (of which there are more than a few) will be included for assessment.
5. Begun amassing the item pool which will be needed to conduct the assessment.

WASC
Standards at a Glance

Standard I: Defining Institutional Purposes and Ensuring Educational Objectives

Institutional Purposes

1.1 Formally approved, appropriate statements of purpose; define values and character
1.2 Clear objectives; indicators of achievement at institutional, program and course level; system to measure student achievement; public data on achievement.
1.3 High performance, responsibility, accountability of leadership system

Integrity

1.4 Academic freedom
1.5 Diversity: policies, programs and practices
1.6 Education as purpose; autonomy
1.7 Truthful representation to students/public; timely completion; fair and equitable policies
1.8 Operational integrity; sound business practices; timely and fair complaint handling; evaluation of performance.
1.9 Honest, open communication with WASC; inform WASC of material matters; follow WASC policies

Standard II: Achieving Educational Objectives through Core Functions

Teaching and Learning

2.1 Programs appropriate in content, standards, level; sufficient qualified faculty
2.2 Clearly defined degrees re admission and level of achievement for graduation
- Undergraduate degree requirements
- Graduate degree requirements

2.3 Student Learning Outcomes (SLOs) and expectations for student learning at all levels; reflected in policies, advising, information resources, etc.
2.4 Faculty responsibility for attainment of expectations for student learning
2.5 Students involved in learning and challenged; feedback provided
2.6 Graduates achieve stated levels of attainment; SLOs embedded in faculty standards for assessing student work
2.7 Systematic program review includes SLOs, retention/graduation, external evidence

Scholarship and Creative Activity

2.8 Scholarship, creativity, curricular and instructional innovation valued and supported
2.9 Linkage among scholarship, teaching, student learning and service

Support for Student Learning

2.10 Collection and analysis of disaggregated student data; achievement, satisfaction and climate tracked; student needs identified and supported
2.11 Co-curricular programs assessed
2.12 Timely, useful information and advising
2.13 Appropriate student services
2.14 Information to and treatment of transfer students (if applicable)

Standard III: Developing and Applying Resources and Organizational Structures to Ensure Sustainability

Faculty and Staff

3.1 Sufficient qualified personnel for operations and academics
3.2 Sufficient qualified and diverse faculty
3.3 Faculty policies, practices, and evaluation
3.4 Faculty and staff development

Fiscal, Physical, and Information Resources

3.5 Financial stability, clean audits, sufficient resources; realistic plans if deficits; budgeting, enrollment and diversified revenue
3.6 Sufficient information resources/library, aligned and adequate
3.7 Information technology coordinated and supported

Organizational Structures and Decision-Making Processes

3.8 Clear, consistent decision-making structures and processes; priority on academics
3.9 Independent governing board with proper oversight; CEO hiring and evaluation
3.10 Full-time CEO; CFO; sufficient administrators and staff
3.11 Effective academic leadership by faculty

Standard IV: Creating an Organization Committed to Learning and Improvement

Strategic Thinking and Planning

4.1 Reflection/planning with constituents; strategic with priorities and future direction; aligned with purposes; plan monitored and revised
4.2 Plans align academic, personnel, fiscal, physical, and technology
4.3 Planning informed by analyzed data and evidence of educational effectiveness

Commitment to Learning and Improvement

4.4 Quality assurance processes; assessment and tracking; comparative data; use of results to revise/improve
4.5 Institutional research capacity; used to assess effectiveness/student learning; review of IR
4.6 Leadership and faculty committed to improvement; faculty assesses teaching and learning; climate and co-curricular objectives assessed
4.7 Inquiry into teaching learning leads to improvement in curricula, pedagogy and evaluation
4.8 Stakeholder involvement in assessment of effectiveness

Notes on the use of this document: "Standards at a Glance" is an abbreviated, shorthand-style outline of the Standards and Criteria For Review (CFRs) contained in the WASC Handbook of Accreditation. The handbook is available online at http://www.wascsenior.org/findit/files/forms/Handbook_of_Accreditation_2008_with_hyperlinks.pdf

UEETF Analysis of the CLA

by Mark Appelbaum, Michael Brown and Keith Williams

Validity

The matter of evaluating the psychometric qualities of the CLA is challenging for at least one important reason: though individual student scores are required, the unit of analysis is NOT at the student level; the unit of analysis is the institutions being "represented" by their student samples. There is no information in the CAE technical report (CAE, 2008) that describes the standards to which the tasks were developed. While CAE identifies a general conceptual framework for cognitive abilities that might be addressed by different types of learning assessment, it provides only general justification for why measurement of general "broad abilities" is appropriate as the primary target for CLA assessment (Shavelson, unknown date). While this reference identifies a general conceptual framework for cognitive abilities that might be addressed by different types of learning assessment, it provides only general justification for why measurement of general "broad abilities" is appropriate as the primary target for CLA assessment. Moreover, there is little direct evidence directly attesting to what the derived CLA scores measure or whether the proposed uses and anticipated test-based decisions are empirically supported.

Because institutions are not obligated to follow specific sampling practices – and because those practices are not externally controlled between institutions – CLA cross-institutional comparisons may not be very meaningful. Moreover, if institutional sampling practices are nonrandom, CLA results may not be representative of the students attending the institution; again, this would raise questions about the meaning of an institutions CLA score.

In answer to a question about the availability of evidence supporting the CLA's construct validity, the technical report (CAE, 2008) merely states that the CLA program is currently participating in a construct validity study in concert with ACT and ETS, and they suggest readers look over a copy of a previous test and judge face validity for themselves. The recent report from the Social Sciences Research Council (Arum, Roksa, & Velez, 2008) noted that their research did not "formally test the instrument's psychometric properties nor its construct validity, the CLA indicator appears from a sociological perspective quite promising and worthy of further research and development." Thus, it is reasonable to keep tracking research into the validity of instruments such as the CLA in the future for possible reexamination of conclusions. However, Arum et al. also observed that the kinds of students public research universities pride themselves on trying to admit (e.g., the socially and economically under-represented) would disadvantage such institutions in comparative standing on CLA value-added scores. Moreover, admitting students likely to major in education, human services, or business subject areas would seem to disadvantage such institutions as well, given Arum et al's findings. Such findings would caution against the high-stakes use of CLA-like measures.

Reliability

The reliability of the CLA scores, especially the "value-added" scores, has come under special scrutiny, and this is especially a concern for the typical cross-sectional analysis where comparisons are made between freshmen tested in the fall and seniors in the spring.

Data regarding either student level or institutional level test-retest reliability for the CLA scores, which would give evidence for the temporal stability, was not found. This is important because if the institutional profile changes rapidly over time due to instability of CLA scores, the institutional comparisons are meaningless. However, other reliability data are available. The correlation between hand and machine assigned scores on the make-an-argument and break-an-argument tasks and between two hand scores for the performance tasks also appears acceptable (Klein, 2007). Unfortunately, the correlation of CLA mean and residual scores for random samples drawn from a population show strong correlations for the mean total scale scores but marginal correlations for the residual scores. This would mean that the picture of an institution on the basis of the CLA program could change markedly depending on the samples drawn.

The reliability of the residuals (i.e., the adjusted CLA scores) has come under special scrutiny, and this is especially a concern for the typical cross-sectional analysis where comparisons are made between freshmen tested in the fall and seniors in the spring. Larson (2008) has identified a number of threats to the reliability of the residuals and difference scores: differences in institutional approaches to sampling; variability due to demographic variables (e.g., distribution of academic majors or student sex); differences in the admissions tests used to measure incoming academic quality of students; differences in the CLA task types or versions assigned at an institution; possible interactions between task types and student characteristics; stability of freshman residual and potential differences between freshman residual and what would have been the residual score of current seniors when they were freshman. These threats question the meaning of the difference between freshman and senior residuals, the “value-added” effect. Some of the CLA reliability issues could be mediated by use of a longitudinal model, where a large sample from a given entering class is sampled when they are freshmen and seniors, rather than the more typical use of a cross-sectional model. Yet, few institutions elect to employ the CLA in longitudinal ways.

Evaluation of CLA for Accountability - Value-Added Scores

Advocates of the CLA make a strong case for using a standardized test to generate a score that can be compared across campuses nationally. However the benefits of a standardized measure such as CLA rest upon the assumptions that the estimated scores are the result of a scientific approach to measuring a college’s value-added, and that the standardized metric is reliable and valid for estimating the value-added at a given institution and for comparing the estimated value-added scores across institutions. The use of value-added scores involves many complex issues (see Raudenbush, 2004, Reckase, 2004, and Rubin et al., 2004) and the simple assumption that CLA value-added scores are accurate evaluations of differences in learning at different institutions remains to be validated. Questions related to the reliability of the value added scores have already been addressed in the previous section. A variety of assumptions and issues that could affect the validity and reliability of the value-added scores are further discussed below.

Additional concerns that come from the use of value-added scores involve both how variations in scores from year to year will be reconciled, and how results will be used beyond nominal uses for improving teaching and learning. There is a legitimate concern that the value added results will be used to develop rankings comparing quality at different institutions, without delving into any of the more specific information that might result from use of the test. When the University

of Nebraska at Omaha found out that its CLA scores showed that the University "contributes more to the learning gains made by students than 100 percent of the 176 four-year undergraduate institutions participating in the 2007–2008 CLA," they released a press release touting "UNO First in U.S. for Value-Added Education," drawing criticism from a variety of organizations for their marketing use of value-added scores (Lederman, 2008b). In another example of how use of results can be questioned, officials at Bethel University became "concerned about the great variability in results from year to year. The first year, we looked great, another year, so so. Another year, the results look horrible, like we're not adding any value." (Lederman, 2008a).

We note that the CLA ranks schools according to their estimated "value-added" score, and thus provides a relative rather than an absolute score. UEETF thinks that the public, as well as the universities, care about the absolute performance of graduates, and the graduates' skills and talents and ability to function in their roles as workers, citizens, and family members.

Further Issues Regarding the CLA

There are numerous procedures, claims and assumptions involved with the administration and analysis of data for the CLA that have the potential to undermine the validity and reliability of the resulting institutional scores. They all have the potential to increase the amount of sampling error and undermine the accuracy and usefulness of the resulting data. A number of them will be briefly listed here and where appropriate, discussed. While the CAE has tried to address a number of these criticisms, we generally find their arguments unconvincing.

Sampling

- Differences in institutional approaches to sampling. There are no clear guidelines for how tests should be administered, and the selection of sample students is left to the institution. A common criticism involves a non-random sampling of students taking the test, usually volunteers getting some kind of material reward for participating.

- Variability due to demographic variables (e.g., distribution among fields of study and academic majors, race/ethnicity, primary language spoken at home, gender, etc.). In Klein et al. (2008) the developers of the CLA provide data comparing average SAT scores and the percentages of minorities and females taking the CLA compared to the student body population in 93 participating colleges, and argue that this shows that participants are "a lot like their classmates". While this may be true for this limited set of variables, there are many other potentially confounding factors that are not evaluated – influences such as motivation, academic discipline, socioeconomic level, etc). Similarly, concerns have been raised about interaction between task content area and academic major. To refute this claim, Klein et al. (2008) cites only one as yet unpublished study that showed no better CLA score predictability when task performance area and academic major were included compared to SAT scores alone. Banta (2008) cautions that standardized tests of general intellectual skills "are not content neutral, thus disadvantage students specializing in some disciplines."

- Stability of freshman residual and potential differences between freshman residual and what would have been the residual score of current seniors when they were freshman. Sampling design relies on administering separate components of the full set to different

sub-samples of students and comparing these samples of students cross-sectionally. Colleges may pay an additional fee to have an additional CLA test administered to freshmen in their fourth year, if they are still enrolled, to provide a more valid test of the same population (minus attrition due to drop-outs and nonparticipation).

- Sampling method does not include students who drop out or transfer students, who enter after the freshman year.

Test Versions

- Differences in the CLA task types or versions assigned at an institution.

- Possible interactions between task types and student characteristics.

Direct Usefulness of CLA scores

- The nature of what's being assessed by the CLA program, the proper meaning of the CLA scores, and the appropriateness of expected uses of those scores remains to be established.

- The test results do not separate out the direct educational contribution of a particular institution as separate from general skill development and learning that may have happened regardless of which college a student attended or even learning that might have happened if the student hadn't attended college (i.e., maturation effects).

- Justification for testing critical thinking, analytical reasoning, problem-solving and written communication in a more general sense of "broad abilities" instead of in a context more closely aligned with student curricular programs and disciplines of study remains to be established.

- The claim that CLA offers a standard of learning outcome and a method for assessment that is useful for evaluating instructional improvement efforts and for comparing UC to other higher education institutions in a manner free of institutional differences in incoming student ability and other student characteristics has not been established.

- CLA as an outcome measure does not diagnose the factors that lead to the observed results.
- Many of the factors affecting student learning are educational processes that CLA does not measure and does not capture. The Council of Independent Colleges (CIC, 2008) has suggested pairing the CLA with other assessment methods, and this might be taken as evidence that by itself the CLA is limited in how it can help improve teaching and student learning.

- The reported CLA scores have no empirically supported educational meaning or value that can be used to improve undergraduate curriculum. Assessments and curricula need to be aligned so that the assessments match the learning experiences of the students at an institution.

- To the extent that the CLA measures only the kinds of students admitted by an institution, high-stakes use of the CLA may dictate changes to institutional admissions practices, changes that may conflict with the mission of the institution.

Challenges of Implementing CLA

- Obtaining an appropriate cohort of students, who volunteer to take the test, to obtain a sampling of students across all disciplines.

- Ensuring that students are motivated to do their best on the test.

- Time required for students to take the test (approximately 3 hours). “Getting students to sit at a computer long enough to take the test can be a dilemma when it comes to first years and can be an outright challenge when it comes to seniors.” (CIC, 2008).

- Cost of participating in the CLA program ($28,000 for CLA tests administered at UC Riverside).
  - Cost of student enrollment (or volunteer) incentives ($30 to $50 per student test).
  - Cost of administering the tests (information unknown)

Common Data Set (CDS) – Background and Data Categories

In the 1980s, various news and publication agencies began asking for more detailed and extensive information about the campuses to be used for the publication of college guide books and ratings of campuses. Often, the information requested, though similar in scope, was sufficiently different that it required special analyses to extract the requested information. Given the workload required to respond to these requests, a UC institutional researcher (Bob Daly, now at UC Riverside) developed a common template of information that he provided to each publication firm. This idea caught on and was adopted by the Association for Institutional Research (AIR) and is now employed at most four-year colleges and universities.

AIR has established an on-going committee that evaluates and recommends information to be included in the Common Data Set (CDS), although the data elements included remain very consistent from year to year.. Each university is encouraged to publish its Common Data Set on the campus web site. Each UC campus, with the exception of UCSF, publishes the CDS on their web site.

The CDS includes the following sections and corresponding information:

- General Information (contact information, calendar type, degrees offered)
- Enrollment and Persistence (full-time/part-time, gender, race/ethnicity, degrees awarded, rates of graduation and retention)
- First-Time, First-Year (Freshman) Admission (number of applicants, admits, and enrolled by gender, high school credit requirements, selection criteria, admittance test polices, average high school performance, and admission policies)
- Transfer Admission (number of applicants, admits and enrolled by gender, application requirements, transfer credit policies, and transfer admission policies)
- Academic Offerings and Policies (special study options, and areas of required coursework)
- Student Life (freshmen participation characteristics, offered activities, and housing types)
- Annual Expenses (tuition and fee costs and policies, and typical cost to attend)
- Financial Aid (data presented by type of aid including total university expenditures, numbers of recipients, and average award amounts)
- Instructional Faculty and Class Size (full-time/part-time faculty headcount by gender, student/faculty ratio, and number of classes by class size)
- Degrees Conferred (percentage of Bachelor degrees awarded in prior year by standard Classification of Instruction Program (CIP) code)
- Glossary of Terms.

Websites for the UC Undergraduate Campus Profiles:

Berkeley:	http://metrics.vcbf.berkeley.edu/Berkeley%20Template.pdf
Davis:	http://facts.ucdavis.edu/profile.lasso
Irvine:	http://web.oir.uci.edu/portrait/2008-uc-irvine-profile.pdf
UCLA:	http://www.aim.ucla.edu/profile/main.asp
Merced:	http://ipa.ucmerced.edu/docs/facts/UC%20Merced%20Profile.pdf
Riverside:	http://collegeportrait.ucr.edu/
San Diego:	http://studentresearch.ucsd.edu/sriweb/UCSDCollegeProfile.pdf
Santa Barbara:	http://bap.ucsb.edu/IR/UCSB_Portrait.pdf
Santa Cruz:	http://planning.ucsc.edu/portrait/

FILES

PO 07063

-----Original Message-----
From: Robert Dynes
Sent: Friday, November 09, 2007 1:37 PM
To: bkirwan@usmd.edu
Cc: pmcpherson@nasulgc.org; dshulenburger@nasulgc.org; chancellor@berkeley.edu; chancellor@uci.edu; chancellor@ucsd.edu; robert.grey@ucr.edu; jmbishop@chanoff.ucsf.edu; lnvanderhoef@ucdavis.edu; henry.yang@chancellor.ucsb.edu; chancellor@conet.ucla.edu.edu; chancellor@ucsc.edu; chancellor@ucmerced.edu; Rory Hume; Katherine Lapp; Bruce Darling; Scott Sudduth
Subject: Voluntary System of Accountability
Importance: High

Brit Kirwan, Chancellor, University System of Maryland
Chair, VSA Presidential Advisory Committee

Dear Brit:

Thank you very much for your invitation of September 14 to participate in the Voluntary System of Accountability (VSA). The University of California applauds NASULGC's and AASCU's joint effort to develop a common accountability template in order to improve the quality of information about college and universities that is publicly available. The development of the VSA template represents a tremendous service to students, parents, and policymakers alike.

We have been pleased that UC staff--Dennis Hengstler of UC Berkeley and Samuel Agronow of the Office of the President--were invited to participate in the development of the accountability measures. They both noted the highly collaborative, professional, and efficient process by which various reporting measures were developed. We appreciate that you have acknowledged the value of our own extensive survey of student engagement, the University of California Undergraduate Experience Survey (UCUES), and that Part 2 of the VSA was constructed in part on the UCUES model.

The University of California is also very committed to ensuring that students and families have information to make informed decisions about college attendance. Thus, we strongly support the parental information section that is included in Part 1 of the VSA.

However, we continue to have concerns about Part 3 of the VSA on student learning outcomes. The University has concluded that using standardized tests on an institutional level as measures of student learning (1) fails to recognize the diversity, breadth, and depth of discipline-specific knowledge and learning that takes place in colleges and universities today and (2) usurps the role of campus and departmental faculty in assessing student learning.

It is for these reasons that I regret to inform you that all nine of the University of California's general campuses will opt out of participating in the VSA program. Instead, the nine UC campuses with undergraduate programs will develop a common systemwide accountability and reporting template whose format and definitions are consistent with the VSA, thus providing information to the public that can easily and reliably be compared to information on other university Web sites. We will also include student learning information that the public can use to evaluate our educational quality. Finally, we are considering inclusion of a few additional items that reflect recommendations from AAU, NASULGC, NAICU and the AASCU, such as data about retention and graduation rates, results from student and alumni surveys, and information about our graduate programs.

The information we ultimately provide for UC Web sites will recognize, honor, and support the overall VSA approach and will be responsive to the widespread calls for greater accountability across higher education. The University of California thanks NASULGC for its efforts in developing the original template.

We look forward to working with you in the future on higher education accountability efforts.

Sincerely,

Bob

Robert C. Dynes
President
University of California

cc: President M. Peter McPherson, NASULGC
Vice President David Shulenberger, NASULGC
Chancellors
Provost Hume
Executive Vice President Lapp
Executive Vice President Darling
Assistant Vice President Sudduth

Websites for the UC UCUES Reporting:

Berkeley:	http://ucues.berkeley.edu/main/
Davis:	http://www.sariweb.ucdavis.edu/
Irvine:	http://www.assessment.uci.edu/UCUESindex.html
UCLA:	http://www.sairo.ucla.edu/data/efforts_ucues.html
Merced:	http://ipa.ucmerced.edu/survey.htm
Riverside:	http://irue.ucr.edu/reports/ucrstudentsurveybrieffall2007.pdf
San Diego:	http://studentresearch.ucsd.edu/sriweb/Surveys/ucues.html
Santa Barbara:	http://bap.ucsb.edu/IR/UCSB_Portrait.pdf (pp. 5-6)
Santa Cruz:	http://planning.ucsc.edu/irps/ENROLLMT/UCUES/

Dates and Websites for UC Graduating Senior/Career Destination & Alumni Surveys *

Graduating Senior Surveys / Career Destination Surveys

Berkeley: http://career.berkeley.edu/CarDest/CarDest.stm (every year)

Davis: http://www.sariweb.ucdavis.edu/ (1996, 2004-05)

Irvine: 2008

UCLA: http://www.sairo.ucla.edu/data/efforts_grad.html
http://www.college.ucla.edu/seniorsurvey/ (L&S)

Riverside: 2007 graduating class
http://careers.ucr.edu/NR/rdonlyres/CEFFEB3D-A272-4BBD-A560-EAF210DCA513/0/FinalAnnualReport0708.pdf

San Diego: http://career.ucsd.edu/sa/Survey/Survey.shtml
http://studentresearch.ucsd.edu/sriweb/Surveys/css.html (2006 survey of 2002 freshmen cohort)

Santa Barbara: http://www.surveymonkey.com/s.aspx?sm=LpPydR4zlRVrVY6RYl4XNw_3d_3d
http://parenthandbook.sa.ucsb.edu/generalinfo/index.aspx?page=afterucsb (2004)

Santa Cruz: http://planning.ucsc.edu/irps/surveys.asp (1990, 1993, 1995-97, 2003, 2004 class)

Alumni Surveys:

Berkeley: by department

Davis: http://www.sariweb.ucdavis.edu/ 1973, 1983, 1993, 1999, 2002 graduates

Irvine: mid-1990s; Social Science alumni, spring 2009
https://eee.uci.edu/toolbox/survey/form/take.php?take_id=5678&url=socsialumnisurvey)

UCLA: by department

Riverside: summer 2001 – spring 2002 graduates

San Diego: http://studentresearch.ucsd.edu/sriweb/Surveys/postbacc.html (1993, 1998, 2001, 2005)
http://abet.ucsd.edu/ce25/assessments/alumni/default.aspx (engineering)

Santa Barbara: by department; 1996 survey of classes of 1973, 1983, 1993

Santa Cruz: by department and 1993; 1999 survey of classes of 1995-97

* UC Merced had its first graduating class in May 2009 so this type of survey data is not applicable.