

CHAPTER TWO: ASSESSMENT OF UNDERGRADUATE EDUCATION

In recent years, the focus of regional accrediting agencies, including WASC, has shifted from measuring the *inputs* of education, such as the number of books in the library and the size of the physical plant, to assessing the *outcomes* of education. Several factors have led to this change of focus, including increased pressure from state legislatures to require more accountability from publicly funded institutions, general complaints from employers about graduates' lack of preparation for the workforce, and questions from the public concerning the value of a diploma (Banta et al., 1996; Palomba & Banta, 1999).

To respond to these concerns, accrediting agencies have gradually changed their approach from one of assessing inputs to one of assessing outputs. What can students do as a result of their college education? What knowledge, skills and attitudes do they develop in college? To what extent have they developed life-long learning and thinking skills? In short, how effective is the educational process and what procedures or tools are in place to ensure that the educational process is effective? Understanding that each post-secondary institution is unique in terms of its mission, student body, faculty and campus culture, WASC has taken the approach of letting institutions define for themselves how to assess educational effectiveness (WASC, 1999). The purpose of this chapter, then, is to review and reflect on those policies and procedures in place at UCI that are used to assess the quality of undergraduate education and, as needed, to make recommendations for strengthening those policies and procedures.

ASSESSMENT AT UCI

Assessment of undergraduate education is a regular and sustained activity at UCI. The quality of undergraduate education is a priority, and feedback—in a variety of forms and from a variety of audiences—is routinely considered when making policy or program changes. Faculty members regularly assess the quality of learning that takes place in their classes. They use information from course evaluations to modify and improve their courses. Faculty also listen to feedback from employers and graduate schools when creating new programs of study, such as majors and minors. Academic advisors routinely use diagnostic and placement information when enrolling students into courses. Administrative program directors use participant surveys, focus groups and other feedback mechanisms to determine program directions and to make improvements. The University’s entire budget process itself is information-rich; top-level administrators make budget decisions, in part, on how well units can demonstrate the need for new programs as supported by facts, figures, and other information.

At UCI, we define “assessment of undergraduate education” as the systematic collection and analysis of information for the purposes of monitoring and improving undergraduate education. Information is broadly defined to include both qualitative and quantitative data and may also include information collected from students, from electronic records, from surveys, from outside experts, and other sources. Analysis also is broadly defined to include statistical analysis, comparisons with peer institutions, expert judgment, and so on. The key component is how the information is used: any information that is collected and analyzed for the purposes of improving undergraduate education and the undergraduate experience at UCI is included in this broad definition.

At UCI, assessment of undergraduate education is a decentralized activity involving many administrative and academic units. Primary responsibility for analyzing and reporting official student data resides with the Office of Analytical Studies and Information Management (OASIM) which publishes basic enrollment, retention, and graduation information on its Website, in the *UCI Fact Card*, and in the *UCI General Catalogue*.

Promoting excellence in undergraduate education is one of the primary missions of UCI's Division of Undergraduate Education (DUE). DUE includes 10 administrative units focused on the improvement of undergraduate education:

- Center for International Education
- Campuswide Honors Program
- Instructional Resources Center
- Learning and Academic Resources Center
- Student Academic Advancement Services
- Testing
- General Studies Advising Program
- Washington (DC) Center Program
- Undergraduate Research Opportunities Program
- Office of Research, Evaluation and Grants

One of these units, [Research, Evaluation and Grants](#), routinely collects and analyzes information on undergraduate students, the undergraduate curriculum, and the Division's own programs. Since 1995, the Division has prepared the narrative component in UCI's contribution to the *UC Report to the Legislature on Undergraduate Instruction and Faculty Teaching Activities*. This annual report summarizes new and on-going efforts for the protection and improvement of undergraduate education.

The Division of Student Affairs (DSA) has primary responsibility for programs that support the co-curricular environment of the campus, such as housing, financial aid, clubs and activities, orientation, leadership training, cross-cultural activities, student health, and career advising. DSA also includes the Office of Admissions and Relations with Schools and the Registrar's Office, which are responsible for collecting and analyzing basic admissions and course enrollment information on students.

In addition to these administrative units, every academic unit at UCI and, in fact, every faculty member at UCI is involved in assessment activities related to promoting the effectiveness of undergraduate education.

UNDERGRADUATE EDUCATION AT UCI

While being an integral part of the University of California, each UC campus has formed its own educational and research identity by building on the unique talents and interests of its own faculty and its own campus culture. UCI's academic goals are explicitly stated in the 1999-2000 *UCI General Catalogue* (page 6):

UCI offers programs designed to provide students with a foundation on which to continue developing their intellectual, aesthetic, and moral capacities. Programs and curricula are based on the belief that a student's collective University experience should provide understanding and insight which are the basis for an intellectual identity and lifelong learning.

To accomplish these goals, UCI has established 10 independent academic units (the Schools of the Arts, Biological Sciences, Engineering, Humanities, Management, Physical Sciences, Social Ecology and Social Sciences; Departments of Education and Information and Computer Science) and eight interdisciplinary study programs that provide both undergraduate and graduate education and conduct research. Although this report focuses on undergraduate education, it should be made clear that the quality of both undergraduate and graduate education is intrinsically related. That is, as the quality of graduate education is increased, there is a corresponding increase in the quality of undergraduate education. Undergraduate education benefits from having outstanding graduate students as well as outstanding faculty.

As of 2000-01, UCI offers 55 undergraduate [majors](#); 50 undergraduate minors; numerous concentrations and specializations; honors opportunities for high-achieving students; faculty and staff advising programs; education abroad and other international education opportunities; a Washington (DC) Center program; and opportunities for undergraduate research as well as community service.

One distinguishing feature of undergraduate education at UCI is its general education breadth requirement which *all* UCI undergraduates (regardless of school or major) are required to fulfill. The intent of the breadth requirement is to introduce students to the basic modes of thought that characterize academic disciplines. To fulfill the [breadth requirement](#), students typically take a three-quarter sequence in each of five areas: Writing, Natural Sciences, Social and Behavioral Sciences, Humanistic Inquiry, and Mathematics and Symbolic Systems. Students may also be required to take additional course work in two more areas, Language Other than English and Multicultural Studies and

International/Global Issues, depending on their entering level of preparation and their course selections within the first five breadth areas.

As noted in a separate chapter, undergraduate education at UCI also emphasizes student participation in independent study, research, or similar creative endeavors as a supplement to the undergraduate program. Again, graduate students and faculty are key players in such programs.

ACADEMIC REVIEW PROCESS

The primary assessment tool is the academic review process that is established and carried out by the Irvine Division of the Academic Senate. The Senate has sole responsibility for initiating, approving, and reviewing all academic programs at UCI, including whole academic departments and schools, all majors and minors and other programs of study, and all degree requirements. To ensure the quality of such programs, two sets of procedures are in place: the academic program approval process and the academic review process.

The Academic Program Approval Process

The Academic Senate has sole responsibility for review and approval of all new majors and minors, concentrations and specializations, and of every course that is offered at UCI.

Before an undergraduate course can be taught or listed in the *UCI General Catalogue*, it must be approved by the Academic Senate's Action Committee on Courses. This committee, composed of faculty representatives from each academic unit, reviews the description of the course, its proposed syllabus, and

the homework and examination requirements, and makes sure the course is defensible from an academic as well as intellectual point of view (that is, how it fits into the current curriculum and what its intellectual foundations are). Courses proposed for UCI's general education breadth requirement go through an extra level of review; that is, these courses must be approved by the Council on Educational Policy (CEP) as well as the Action Committee on Courses.

Similarly, new majors and minors go through an approval process that focuses on the academic integrity and coherence of the proposed program. Development of a new major or minor begins with a group of faculty who see a need for the program and are interested in offering courses for the new major. A faculty committee creates a proposal that is reviewed first by the department and then by the school in which the major or minor will be housed. Next, comments are obtained from other schools and departments that might be impacted by the new major, and changes or modifications are made as needed. The proposal is then submitted to appropriate Academic Senate committees for review and approval, and then to the Senate's Divisional Assembly for final approval.

The Academic Review Process

Undergraduate programs in each academic unit are reviewed by CEP every five to eight years. Until 1999, undergraduate and graduate reviews were separate activities, a division instituted initially to assure full and appropriate attention to undergraduate issues. Graduate reviews were conducted independently by the Graduate Council. In spring 2000, a pilot review combining both undergraduate and graduate reviews was conducted in the School of Physical Sciences by a joint committee of CEP and the Graduate Council. A similar joint review of the School of Biological Sciences is planned for 2001. Merging the two

sets of reviews would, in part, reduce the data collection and analysis burden on the academic units.

In any given year several reviews may be in process. Members of CEP and Graduate Council oversee the reviews and select the external reviewers (usually faculty members from similar disciplines at other research institutions). The academic unit being reviewed prepares a self-study that includes enrollment data, graduation rates, comments from alumni and employers, and other indicators of success. The self-study may include feedback collected from students and alumni using surveys or focus groups. The external reviewers review the self-study documents and then spend two to three days on site collecting their own information from students, administrators, and other faculty members. After the site visit, members of the external review committee draft their report. The final report, with comments and observations from the academic unit and recommendations from CEP and Graduate Council, is forwarded to the Executive Vice Chancellor for appropriate action.

Similarly, an academic review process exists for each of the general education breadth categories, such as Writing, Natural Sciences, Humanistic Inquiry, and Multicultural and International Studies. Again, CEP oversees the review process, which includes external reviewers who assess the coherence and quality of the courses offered for that category. These reviews also typically occur every seven years.

Information collected during the academic review process has been used to produce significant changes in undergraduate education. One recent example comes from the Department of History, which was reviewed as part of the School of Humanities external review in 1998-99. As part of the self-study, feedback

regarding courses and the curriculum was collected from students in large-enrollment history classes. The faculty also reviewed course enrollment trends in other schools and departments. In general, although course enrollment was strong, the number of History majors was not growing. A closer review of their lower-division survey courses and upper-division course offerings led the History faculty to reconsider the number and type of courses being offered, which resulted in fewer introductory survey courses and more upper-division courses. The faculty also decided to offer more historiographic courses, partly to attract more students to the major. Students' comments also prompted the faculty to revamp their outreach efforts to undergraduates; there is now in place a very active History Undergraduate Student Association which sponsors colloquia and related field trips.

Similarly, reviews of breadth categories have brought about changes. For example, the two recent reviews of upper-division writing (1996-97) and lower-division writing (1997-98) led to the creation of an ad hoc committee chaired by the Dean of Undergraduate Education. The committee was charged with responding to the two review reports and the Council on Educational Policy's analyses of them with recommendations to the Executive Vice Chancellor on administrative actions to improve the teaching of writing at UCI. In response to the ad hoc committee's report, the Executive Vice Chancellor approved and funded a new campuswide faculty position in Rhetoric and Composition to provide oversight for both lower- and upper-division writing programs. Other responses are described in the chapter on Improving Communication Skills at UCI.

THE ACADEMIC PERSONNEL REVIEW PROCESS

In addition to the academic approval and review processes, the Academic Senate, through its Council on Academic Personnel, also coordinates the academic personnel review process and its required evaluation of every Senate member at regular intervals. This process is a key factor in ensuring the quality of teaching as well as the quality of research at UCI. All Senate faculty are formally reviewed by the Senate and central administration at two- to five-year intervals (depending on rank) for the purposes of possible promotion and advancement. These merit reviews (often supplemented by external letters and recommendations of ad hoc committees, including members from outside UCI) of course entail a close look at a faculty member's research, but the area of teaching also is a mandatory part of the review process. To this end, faculty are asked to submit teaching evaluations and other evidence of good teaching, such as teaching portfolios, as part of their merit reviews. This information, along with a review of the faculty member's research and service, is taken into account in the committee's recommendation to grant, or not grant, a merit increase or a promotion.

EXTERNAL ACCREDITATIONS

Many of UCI's academic programs are accredited by discipline-specific associations, including:

- American Chemical Society (undergraduate degree program in chemistry)
- National Association of Schools of Theatre and University/Resident Theatre Association (Department of Drama)

- California Commission on Teacher Credentialing (credential programs in the Department of Education)
- Accreditation Board for Engineering and Technology (majors in Aerospace, Chemical, Civil, Computer, Electrical, Environmental, and Mechanical Engineering in The Henry Samueli School of Engineering)
- The International Association for Management Education (AACSB) (Graduate School of Management)
- National Planning Accreditation Board (master's program in urban and regional planning)
- American Board of Genetic Counseling (master's program in genetic counseling)
- Association of American Medical Colleges and American Medical Association (M.D. program in the UCI College of Medicine)

To become accredited, each of these academic programs must meet certain standards established by the accrediting board and undergo periodic reviews by external committees.

For example, the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) accredits UCI's undergraduate degree programs in engineering. To prepare for the next review, The Henry Samueli School of Engineering is in the process of collecting information from various constituent groups (e.g., faculty, students, employers, alumni); reviewing the undergraduate curriculum in relation to specific skills and knowledges that ABET requires to be taught; and making changes as needed based upon this information. To date, faculty committee groups have been formed; focus groups with students, alumni and employers have been held; and surveys are being

created and administered. More information on the ABET accreditation process may be obtained from the Associate Dean for Student Affairs in The Henry Samueli School of Engineering.

INSTITUTIONAL RESEARCH

Institutional research is an ongoing assessment activity as well. Basic information on students who apply to and enroll at UCI is collected through the Office of Admissions and Relations with Schools and the Registrar's Office. From 1990 to 1999, data from Admissions and the Registrar have been made available to authorized individuals as part of a campuswide computer system called SINET, which contains basic demographic and transcript information, course grades, SAT scores, and other academic information on each student enrolled at UCI. Student data can be downloaded from SINET into locally developed databases for further analysis. A password protection system ensures that only authorized individuals have access to the SINET student database.

Official enrollment statistics and data on the characteristics of enrolled students are released quarterly by the Office of Analytical Studies and Information Management (OASIM). Annual reports are also produced by OASIM on first- and second-year retention rates as well as four-, five- and six-year graduation rates of each entering class. From time to time, OASIM also conducts special analyses of enrolled students at the request of academic and administrative units. Here are some recent examples of such reports (copies may be obtained from OASIM):

- Students with High Numbers of Units Completed at Graduation, 1994-95 Graduates (Report P2427)

- SAUSD and RSC Graduation Rates – Urban Partnership Program (Report P2642)
- The Henry Samueli School of Engineering Historical Data Request (Report P2645)
- Comparative Information on English Undergraduate and Graduate Programs (Report P2875)
- Academic Program Review: Physical Sciences (Report P3174)
- Engineering Majors Time to Degree (Report P3214)

Additional institutional research studies are periodically conducted by the Division of Undergraduate Education. For example, its Office of Research, Evaluation and Grants regularly monitors capacity and enrollment in breadth and other key courses; this information is used by the Dean of the Division of Undergraduate Education (DUE) to alert academic units to potential problems and to obtain and allocate sufficient resources to meet enrollment demands. The Division also monitors average course grades at the department and school levels to identify any potential problems related to grade inflation.

The Division of Student Affairs also conducts institutional research studies. The Office of Admissions and Relations with Schools (OARS), for example, periodically conducts validity studies of the admissions selection criteria as well as research on the relationship between preadmissions academic measures and college performance. The Office of Admissions also collects and analyzes information on new students collected through the Admitted Student Questionnaire Plus (administered at the same time as the SAT). Such information is used to obtain a better picture of the types of students who choose to enroll at UCI.

EVALUATION OF NEW ACADEMIC PROGRAMS

UCI has a history of trying out and evaluating different approaches to undergraduate education. In recent years, the campus has received several large grants that promote the improvement of undergraduate education. One such example is an National Science Foundation (NSF) grant for the improvement of science, mathematics, engineering, and technology (SMET) education. Funding from this NSF grant was used to support the development and evaluation of several new courses, including an engineering course for non-majors, a calculus course for unaffiliated students, and two new teacher education courses. Program evaluations included classroom observations, student surveys and focus groups, statistical analysis of final course grades, the monitoring of changes of major, and an in-progress longitudinal analysis of student achievement in subsequent courses.

The Department of Physics recently undertook a complete revision of its undergraduate curriculum. The revised program is designed to accommodate a wide variety of eventual career paths; in fact, all Physics majors select a specialty (or “track”) and meet regularly with their track advisor. Available tracks include a professional track, specializations in astrophysics or computational physics, an applied physics track, and a K-12 teaching track. With assistance from DUE, course evaluations and focus groups were conducted during the first year of the new curriculum to provide formative feedback to the course developers. These new courses are now being offered for other majors. Additional funding from the NSF SMET grant is assisting with the expansion of the introductory courses to include other majors, including engineering majors.

Since 1997, the Office of Research, Evaluation and Grants has been conducting evaluation studies that compare traditionally taught introductory economics courses with a new version taught completely in cyberspace (using CD-ROM lectures, on-line discussion groups, an electronic bulletin board, electronic quizzes, and a course Website). Evaluation results comparing traditional learners to cyberlearners show that both groups performed equally well on final exams and that they were equally satisfied with the overall quality of their courses (Navarro & Shoemaker, 1999). This year, cyberversions of introductory economics courses are being offered to undergraduates for the first time, a decision that was based in part on the earlier evaluation results. A similar evaluation study is currently underway that will assess how well students do in this year's cybersections compared to those who enrolled in the traditional sections.

Another example of how evaluation has moved a pilot program into the regular curriculum is provided by the evaluation of extended orientation programs for undecided/undeclared programs conducted by the Office of Research, Evaluation and Grants (Shoemaker, 1995). Its purpose was to evaluate the effectiveness of an experimental, two-quarter, extended orientation and advising program for new undecided students. The study was conducted in fall 1994 and undecided students comprised 28% of the new freshman class, effectively the largest "major" on campus. Student outcome variables were collected at the end of the pilot study, including GPAs, number of units completed, Subject A status, and retention (defined as "still enrolled"). A "value added" analysis, as suggested by Astin (1991), was used to compare actual and predicted GPAs. The evaluation found positive results: undecided students attending the course for one or more quarters during the pilot study obtained significantly higher GPAs and units by the end of the freshman year, and their GPAs were higher than expected. Results from the evaluation were used to expand the pilot program the following year to all

undecided students. The course is now a regular part of the curriculum for undecided/undeclared students.

ASSESSING THE QUALITY OF TEACHING

In 1996-97, the Senate Action Committee on Teaching (formerly known as the Committee on Teaching Quality) proposed and developed a new teaching evaluation form that would be less confusing to students, would provide better and more consistent information to academic personnel committees, and would make a public statement about what constitutes good teaching at UCI. After reviewing course evaluation forms used at UCI and elsewhere and reviewing the research literature on effective teaching, the committee members developed a new form based on 10 key factors related to good teaching. They also adopted a letter grade rating scale (A to F) rather than a numeric rating scale, reasoning that students were more familiar with letter grades and would use them more accurately than arbitrary numerical scales.

Two pilot studies were conducted to assess the reliability and validity of the new course evaluation form. A study conducted by The Henry Samueli School of Engineering comparing old and new forms concluded that there was considerable overlap in terms of content and that results on the new form were fairly consistent with those on the old form. A Division of Undergraduate Education research study concluded that students seemed to grade more generously (i.e., more positive) when they used letter grades than when using numerical rating scales and that there was a positive correlation between ratings using letter grades and those using numbers. Results from both studies were presented at a campuswide Teaching Colloquy.

Subsequently, the Academic Senate endorsed use of the new form and recommended that academic units adopt it for course evaluations. Currently, the Schools of Biological Sciences, Engineering, and Physical Sciences, the Program in Film Studies and selected courses in the School of the Arts have adopted and are now using the new course evaluation form. To familiarize students with the new form, a copy of the Campuswide Teaching Evaluation Form is published quarterly in the *Schedule of Classes*.

To assist students in the selection of courses, the [Associated Students of UCI](#) (the student government association) publishes the *Teacher Evaluation and Course Handbook (TEACH)* which contains summaries of course evaluation surveys, obtained by permission from the academic units. *TEACH* is published annually and is distributed free of charge to all students.

For faculty members who would like more feedback and guidance on how to modify or improve their teaching strategies, the Division's Instructional Resources Center (IRC) offers mid-term assessments that collect information using videotapes and student surveys. Results from the assessment process, plus suggestions for improvement, are shared confidentially with the faculty member. IRC also sponsors quarterly Teaching Colloquies that focus on different pedagogical techniques and may include guest presenters from other campuses. All faculty are invited to attend these Teaching Colloquies. For example, about 100 faculty and staff members attended the Winter Quarter Teaching Colloquy on Problem-Based Learning (PBL) with Dr. Deborah Allen, a national expert on PBL from the University of Delaware.

A new grant from the Hewlett Foundation awarded to the Division of Undergraduate Education in 1999 is helping faculty incorporate problem-based or

inquiry-based learning into general education breadth courses. IRC is again taking the lead on this faculty-development project. Formative as well as summative evaluation activities will be coordinated by the Office of Research, Evaluation and Grants. Data will be collected from students and faculty to assess changes in pedagogy, student learning, and student engagement in learning.

ASSESSMENT OF NEW STUDENTS

Students' academic performance in the undergraduate years is regularly monitored with the usual indicators, beginning with the administration of diagnostic and placement exams for new students. These exams, including the systemwide [Subject A exam](#), a diagnostic test used to place students in appropriate English composition courses, are developed (or selected, in the case of nationally standardized exams) and graded by faculty members who also establish the placement criteria.

At UCI, in addition to the Subject A exam, new students may be required to take placement exams in chemistry, physics, mathematics, foreign languages, and/or English as a second language (ESL), depending on their majors and their level of academic preparation. All new students receive a detailed brochure describing the placement tests and the testing schedule. Tests are administered during the summer as well as throughout the academic year to meet the enrollment needs of students. Detailed diagnostic and placement results from the exams are provided to students and academic counselors to ensure that students enroll in the courses best suited to their skills and level of preparation.

Each summer orientation programs for new freshmen and for new transfer students are evaluated by the Office of Research, Evaluation and Grants. Both

students and parents are asked to provide feedback to the directors and staff of the orientation programs on the quality and usefulness of different components of the programs. Additional data are collected from those who stay in the residence halls during orientation and from students attending certain discussion sessions; results from these surveys are used to ensure the quality of services delivered by student staff members.

Periodically, UCI conducts comprehensive surveys of new students. In recent years, the following surveys have been administered to learn more about the attitudes, opinions, and special skills of new students:

- *New Student Survey, 1995* (published by the American Council on Education and UCLA's Higher Education Research Institute; administered and analyzed by UCI's OASIM). Periodically, each of the UC campuses participates in this annual, national survey of the attitudes, opinions and plans of new students. In 1995, UCI joined with other UC campuses in adding additional survey items related to plans for bringing or purchasing a personal computer in the first year at UCI. A summary of the survey findings indicated that about two-thirds of the respondents indicated they expected to have a personal computer that fall; a similar number agreed that "computers are easy for me to use" (Selegan, 1996).
- *New Student Survey, 1998*. A repeat of the 1995 survey of entering students indicated that UCI was the first choice for almost 60 percent of the respondents (a response rate of 23 percent). When asked what influenced their choice of UCI, 56 percent noted its good academic reputation, 47 percent noted that its graduates get good jobs, and 34

percent noted that graduates go to top graduate schools. Approximately 20 percent of the respondents indicated they planned to obtain a master's degree and 4 percent indicated that they plan to obtain a doctorate. The 1998 administration of the New Student Survey was sponsored by the Division of Student Affairs. Further analyses of the results will focus on comparisons between UCI and other highly selective public universities and on differences between the 1995 and 1998 results from UCI students.

- *Informatics Readiness Survey of New Students, 1998* (created and administered by the Office of Academic Computing, now called Network and Academic Computing Services-NACS; the UCI Libraries, and the Division of Undergraduate Education). The purpose of this survey was to determine how well new students were prepared to use computer-based resources as part of their academic study at UCI, and to identify the types of computer training that they might need. For comparison purposes, some of the survey items from the New Student Survey of 1995 were repeated. Administered during the summer advising period by the academic units, the 1998 survey had a 50 percent response rate (Shoemaker & Franklin, 1998).

Compared to the freshman class of 1995, the freshman class of 1998 was more likely to have a personal computer during the first year at UCI and was slightly more confident about their computer skills. About 60% of the 1998 freshman class was “plugged into” the Internet on a regular basis, already had an Internet service provider (ISP), and accessed the Web at least once a week. To learn more about computers, the most freshmen's most popular method was learning

from friends, followed by learning as part of a course and learning on their own. The topic which attracted the largest percentage of students (57%) was learning more about the on-line catalogs of the UC Libraries. Information from this survey has been used to redesign computer workshops for students.

- *Characteristics of newly admitted students* are weekly reports organized by class level, academic unit, and ethnicity, and produced by the Office of Admissions and Relations with Schools. This information is extremely useful for academic planning and advising.

ASSESSMENT OF ENROLLED STUDENTS

Academic progress of [enrolled students](#) is assessed in a variety of ways including the usual array of techniques such as regular course examinations, written assignments, research projects and in many instances, a capstone experience such as a senior thesis, participation in an honors program, senior seminars and examinations, senior design projects (in engineering), or recitals or exhibitions (in the arts programs). Capstone experiences, in particular, are employed to assess students' mastery of course material and their ability to integrate the material learned in several courses into a meaningful whole. These capstone experiences, many of which are unique to the research university setting, are described more fully in the chapter on Undergraduate Research Opportunities at a Research I University.

Students' academic progress is carefully monitored by academic advisors in each student's school or major. Students who are encountering difficulties receive special attention. Each academic unit receives quarterly lists of students whose

GPA's and/or number of units completed indicate they are subject to probation and disqualification. Depending on the academic unit, this list may trigger a letter to the student, a required advising visit with a counselor or faculty advisor, or a recommendation to seek tutoring or other supplemental academic assistance, which are readily available on campus.

The Henry Samueli School of Engineering has recently implemented an additional assessment tool for students who receive probation counseling. As part of the counseling they receive, students are asked to complete a learning styles inventory. Results from the inventory are then discussed with the student and used to make recommendations on modes of learning and study methods that best fit the student's learning style.

Characteristics of enrolled students are carefully monitored. OASIM provides quarterly information on number of students enrolled and their characteristics (age, gender, ethnicity, class level and academic unit). This information is broadly shared with faculty, administrative staff, and the public through the OASIM Website, the *UCI Fact Card* and the *UCI General Catalogue*. These data form the core of student information that is regularly used for planning and budgeting related to undergraduate education.

Surveys of enrolled students are administered periodically in response to current issues. For example, in spring 1997 OASIM administered a Web-based Campus Experiences Survey. Although the response rate was fairly low and students in the sciences were slightly overrepresented, this survey was useful for several reasons: (1) it demonstrated the cost-effectiveness of using Web-based surveys of students, and (2) the findings confirmed that students gave consistently high importance to developing problem-solving skills, skills needed for employment,

and effective speaking skills (Selegean, 1998). Since that time, the campus has implemented several other successful Web-based surveys in several areas, such as the evaluation of the on-line economics courses described above previously.

In spring 1999, the Division of Student Affairs administered the *Student Opinion Survey* which was modeled after UC San Diego's *Quality of Campus Life: A Student Opinion Survey*. The survey asked about participation in campus life (frequency and satisfaction with services), opinions on academic issues, and background characteristics. In terms of level of satisfaction, the top five choices of respondents were: the Student Center, the Registrar's Office, New Student Orientation, Admissions Office, and Clone Notes. Results are still being reviewed by Student Affairs and by the Division of Undergraduate Education.

Retention and graduation rates of currently enrolled students are produced annually by OASIM. These reports typically report one- and two-year retention rates and four-, five- and six-year graduation rates for various cohorts of freshman classes. As requested, special analyses of retention and graduation rates are calculated for groups such as athletes (results are published in the *UCI General Catalogue*), undecided/undeclared students, and others. Such information is extremely helpful in shaping academic support programs.

Retention and graduation data are also used routinely for external audiences, such as *U.S. News & World Report's* rankings. For example, in 1999, UCI was rated first in the country in "value-added" or graduation rate performance. This analysis indicated that UCI had higher than expected graduation rates based on students' entering SAT scores and high school GPAs. Another external audience is the National Collegiate Athletic Association. As part of our NCAA Division I

status, UCI reports annually on cumulative graduation rates by intercollegiate sport.

Students who leave without graduating are asked to complete a short exit survey administered by the [UCI Ombudsman Office](#). The purpose of this confidential survey is to identify and understand the various reasons why students withdraw without graduating. Typically, students report personal and financial problems more frequently than academic problems as a determining factor in leaving the institution. For example, during 1998-99, about 450 students completed the exit survey. The top three reasons for students who withdrew during fall quarter were medical, financial, and family responsibilities. As appropriate, summaries and general trends from these surveys are shared with associate deans, senior academic counselors, and others.

EVALUATION OF CAMPUS SERVICES

Academic support programs and co-curricular programs are routinely evaluated by students and other client groups. Information from such evaluations is collected and analyzed by the cognizant unit so that improvements may be implemented as needed.

The Division of Undergraduate Education routinely collects information on students who use its programs. For example, during the 1995-96 academic year, 57 percent of the new freshman class participated in one or more academic support programs provided by the Learning Skills Center, Tutorial Assistance Program (these two units are now combined into the Learning and Academic Resource Center [[LARC](#)]), and Student Academic Advancement Services

(SAAS). The largest groups of new freshmen using these services were [undecided/undeclared](#) students and Biological Sciences majors.

In addition, the Division of Undergraduate Education routinely collects evaluation data. For example, LARC regularly administers student surveys at the end of its workshops and at the end of each tutoring program. Results from these surveys are used by the program managers to revise and improve the programs as needed, and to assess the effectiveness of tutors and other instructors. The Division's [General Studies Advising](#) program for undecided/undeclared students regularly evaluates its course, University Studies 1A-B, and the students who lead the course discussion groups. The Division's [Testing Office](#) also conducts periodic surveys of students who take placement exams to assess how well students understand the testing requirements as well as the test administration information. The California Alliance for Minority Participation ([CAMP](#)), a Statewide initiative funded by NSF that seeks to increase the quality and quantity of minority students receiving baccalaureate degrees in science, engineering and mathematics, also is regularly evaluated. Each year, tables are generated regarding participation and graduation data by major, ethnicity and gender. Informal feedback from participants also is collected at CAMP workshops and seminars. The number of CAMP UCI graduates has increased 78%, from the 1999-91 baseline year to the 1997-98 graduating class.

Units within the Division of Student Affairs also routinely collect feedback information from students using its services. To encourage students to provide feedback, most units such as Financial Aid [Financial Aid](#) and [Student Health](#) provide short evaluation surveys at the point of service – that is, at the front desk or other convenient location. Responses from these surveys can be analyzed by gender, ethnicity, major, and residence (on or off campus) and are used for

program improvements. Workshops such as “Immigration Update and Visa Training” by International Student Services and Residential Life Training are evaluated using participant surveys; typically, these surveys ask the participant to rate the quality of the presentations, to rate the overall usefulness of the information presented, and to make suggestions for improving the workshop. Periodically, the housing units such as Arroyo Vista and Middle Earth conduct needs assessment surveys to determine how well existing programs are working and to obtain suggestions for new programs. Additionally, Student Affairs conducts evaluations of courses that it sponsors, such as Psychology 11E: Social Psychology of Higher Education (taught by the Dean of Students).

ASSESSMENT OF POST-BACCALAUREATE OUTCOMES

UCI both performs alumni surveys and collects information on student MCAT scores (Medical Colleges Admission Test).

The campus periodically administers surveys to students who have graduated from the university. For example, students who graduated in 1993-94 with a baccalaureate degree were surveyed by the [Career Center](#). Results from that survey, described in the report *Beyond the Bachelor's Degree: Career Survey Results of 1993-1994 Graduates* (available from OASIM), indicate that about 31 percent of those surveyed were continuing their education one year after graduation. Of those who were working, the largest percentage (26 percent) was employed in human services, followed by technical fields (21 percent) and sales and marketing (14 percent).

Due to funding constraints, no alumni survey has been conducted by the UCI Career Center since the mid-1990s. However, in 2000, the Center launched an

annual on-line, Web-based survey to solicit data from Class 2000 graduates. Participation in this rolling survey will be invited from April 1 through October 31, 2000. Since UCI maintains student e-mail address for six months post-graduation, Class 2000 graduates will have the opportunity to complete the survey whenever career plans are launched, jobs are negotiated, or graduate admissions obtained. The goal of this survey is to provide the campus with career-related information, such as part-time or full-time employment, salary information by function and industry, graduate school admission data, and “actively seeking work” data. The data will be used by UCI’s academic units and administrators for reports to external agencies.

Some academic units also administer their own alumni surveys. For example, the Department of Information and Computer Science (ICS) administers an annual survey of its baccalaureate graduates. The five-part survey includes sections on (1) the quality of the undergraduate program (courses, preparation for a career or graduate school, academic advising, availability of computers, etc.), (2) immediate work plans, (3) graduate school plans, (4) interest in returning to campus to share experiences with current students, and (5) a blank space for additional comments. Similar alumni surveys are administered periodically by the School of Biological Sciences, The Henry Samueli School of Engineering, the Women’s Studies Program, and the Department of Physics, among others.

UCI’s Campuswide Honors Program ([CHP](#)) has its own alumni association and regularly communicates with its alumni through regular newsletters (two to three per year), messages using a ListServ, and invitations to events for the alumni and for alumni and students together. The purpose of the alumni group is to encourage alumni to continue their contacts with each other and with CHP, and to continue to support a sense of community. Many of the alumni attend CHP events on campus and have helped with recruitment of new students. From these

various formal and informal contacts with alumni, CHP has received valuable feedback regarding its programs and services.

The School of Biological Sciences routinely collects information on its students' scores on the Medical Colleges Admission Test (MCAT) which is required for admission to medical school.

CONCLUSIONS AND RECOMMENDATIONS

Assessment of undergraduate education is a regular and sustained activity at UCI. Assessment of learning takes place in every classroom and with each capstone experience. Assessment of teaching regularly takes place in every course. Assessment of new, continuing and graduating students takes place regularly. Assessment of courses, majors and minors is conducted regularly by the Academic Senate. And assessment results are routinely used to monitor and improve academic and related programs.

Assessment activities are distributed throughout the campus and have become a regular part of "doing business" at the University. New programs are carefully evaluated and institutional research studies are conducted. Program participants are regularly surveyed. Data are collected and analyzed and form an integral part in the budget allocation process. UCI is a "data-rich" organization – that is, one which collects and uses many types of assessment information to continually modify and improve its educational programs.

In recent years, UCI has made significant progress in the area of assessment. For example, OASIM is now completely integrated into the academic review process; it provides basic information (enrollments, student credit hours, average SAT

scores, graduation rates, etc.) for each academic unit being reviewed. Distribution of basic information about the institution and its students is routinely published by OASIM on the Web and the annual *Fact Card* publication. The Registrar has developed SINET, a campuswide student database. The Division of [Undergraduate Education](#) recently created a comprehensive student database that integrates data from [Office of Admissions and Relations with Schools](#), the [Registrar](#), [Financial Aid](#), and the Division's academic support programs. The database is used by DUE to generate information needed to inform decisions related to evaluation of programs and development of new academic policies. In addition, The Henry Samueli School of Engineering has launched a comprehensive assessment program in preparation for its ABET accreditation process.

Although we do an enormous amount of assessment at UCI, we could be more systematic and coordinated in our assessment efforts and we could share our findings more broadly. Below are some suggestions that the campus may want to consider to achieve these goals:

- 1. Consider forming a campuswide task force or committee to continue the discussion regarding assessment of undergraduate education.*

Discussions regarding assessment of undergraduate education should continue. To ensure that such conversations take place and to open up the dialogue to a wider group, the campus may want to consider forming a campuswide task force or ad hoc committee on the assessment of undergraduate education. The charge to the task force might be to reach some consensus regarding the purposes of assessment and its place in the undergraduate program, the reasons for doing it, what costs and benefits

are associated with it, how it might be done, etc., and to make recommendations, as needed, for more systematic assessment of undergraduate education. For example, should the campus institute more capstone experiences that by their very nature require students to demonstrate critical thinking and analysis skills across several courses? Should students be asked to demonstrate their writing and speaking skills before they graduate? What role might student outcomes play as part of the academic program review process?

These are complex questions with complex answers. It may be difficult to form consensus and to agree on recommendations. However, given the change in focus of most accrediting groups, including WASC, from inputs to outputs, the campus should consider undertaking a serious discussion of such topics.

The Dean of Undergraduate Education could serve as chair of the task force. Members of the task force might include the associate deans for undergraduate education, other faculty members, academic counselors, and staff members with expertise in assessment or evaluation, such as those who belong to UCI's informal Institutional Research Group. Final recommendations from the task force could be forwarded to the Executive Vice Chancellor, the Academic Senate or other entities, as appropriate, for implementation.

2. Consider conducting regular, periodic surveys of entering, continuing and graduating students.

This report found many examples of surveys for new, continuing and graduating students, but few if any were coordinated in a way that would make longitudinal studies possible. How do students' attitudes change during college? What out-of-class experiences seem to be related to academic success? What are the entering characteristics of students who graduate in a timely fashion? What out-of-class experiences seem to be the most valuable? How well does the undergraduate program prepare students for the workplace or for life-long learning? These and many other questions could be answered through a series of coordinated student surveys.

One concrete suggestion is to explore available assessment tools that provide an integrated approach to surveying new, continuing and graduating students. For example, the American College Test group ([ACT](#)) has developed a series of survey instruments for all three populations that contain some of the same survey items and themes at all three levels. The Educational Testing Service ([ETS](#)) has developed the Academic Profile for assessing outcomes of general education. UCLA's Higher Education Research Institute has a similar set of surveys. Standardized, nationally administered instruments have the added advantage of comparable results, or norms, based on similar institutions, and usually have the flexibility for institutions to add some of their own survey items.

Another suggestion is to consolidate alumni surveys wherever possible. Several administrative offices as well as academic units are interested in surveying students who graduate from UCI. At a minimum, the campus should begin collecting career and graduate school placement information

from recent alumni, as is planned with the new Web-based Career Center surveys. Additionally, information regarding general academic satisfaction as well as learning outcomes information should be collected on a regular basis. Preliminary meetings for consolidating surveys have already taken place among University Advancement, the Alumni Association, the Career Center, OASIM, and the Division of Undergraduate Education. These discussions should continue.

Finally, a regular schedule of administration could be adopted. For example, major surveys of new freshmen could be done every three years, alumni surveys on alternate years, etc. Currently, there is no campuswide schedule for administering such surveys. Coordination of student surveys will require cooperation among administrative and academic units as well as the addition of resources for the purchase, administration and analysis of the surveys. Such a project could also lay the foundation for closer cooperation among the various campus units that currently conduct institutional research and evaluation studies. Closer cooperation of these units would benefit the campus as well, since duplication would be reduced and technical expertise could be shared.

3. Consider disseminating results of effective practices more widely.

Due to the distributed nature of assessment practices at UCI, few results are disseminated campuswide. As appropriate, more units should share their results on a regular basis, preferably using the Web. When research studies or evaluations are repeated, results from prior years also should be published on the Web. Other means of distributing results are quarterly forums for faculty and staff (such as those previously sponsored by OASIM) as well as selected campuswide publications, such as the *UCINews* (the campus newsletter for faculty and staff), the *UCI Journal* (a periodic newspaper for the campus and community-at-large) or the *SMET Newsletter*.

In making this recommendation, it is clearly understood that not all results of institutional research studies or program evaluations can or should be publicly released. For example, whenever confidential information is collected or individual participants or program leaders can be identified, it would not be advisable to release the information widely. As in all things, good judgment and discretion are required.

Disseminating results of successful practices is another way of bringing together the various units involved in institutional research and evaluation. Again, this would benefit the campus in the long run by reducing duplication and enabling technical expertise to be shared across units.

In addition to these suggestions, there are other resources on assessment, such as “The Principles of Good Practice for Assessing Student Learning,”

developed by the Assessment Forum of the American Association for Higher Education (AAHE, 1992). These principles are similar to the principles of good practice in undergraduate education developed by Chickering and Gamson (1987). A tenth assessment principle was later suggested by the authors of *Assessment in Practice* (Banta et al., 1996) who reviewed over 165 case studies of assessment in higher education. These and other resources on assessment can help frame further campuswide discussion of assessment issues.

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