

Handbook
on
Departmental Assessment of Undergraduate Learning
at the
University of Hawai'i at Manoa
Prepared by the
Faculty Senate Committee on Academic Programs and Policies

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Foreword: This Policy Statement

This policy initiative alerts faculty to the need to initiate, conduct, or improve and extend department and program based assessment of student learning. Assessment of the learning experience of UHM students is required by the recent accreditation report of WASC (and requests by the Federal Department of Education and Congress). This report expects that UHM departments under review should have assessment policies, if not practices and results, already established for the next WASC visit in 2002. Each department or program is left to design its own procedures, while the purpose of this policy *Handbook* is to assist each unit's faculty in developing its own assessment plans for its departments. It is understood that this endeavor complements other assessment initiatives already being undertaken by departments and programs at the UHM.

I. Purposes of Assessment

The assessment of learning of its undergraduates by each department and program is one of the major components of academic assessment at UHM. Assessment of student academic achievements will provide information to each department and program (henceforth referred to only as "department") in all colleges and schools on the effectiveness of its curriculum in the learning process for its students. Fundamental questions asked by each department will include:

How effective is a department in reaching its academic learning objectives?
Are students learning what the departments want them to accomplish?

Assessment should not be confused with individual faculty evaluation and, therefore, is not designed with that goal in mind. The assessment results will, however, shed some light on the overall teaching success of faculty in the various departments. A wide range of methods and instruments will be used by each department and across departments to represent as comprehensively as possible the variety of learning experiences for undergraduate students at UHM. In the end, assessment of the student experience promises to improve the delivery of education itself.

This *Handbook* spells out the principles and guidelines for the assessment of student learning at UHM. Assessment will differ from department to department because of the different scope and mission of each discipline. It is not the goal of this policy initiative to reach uniformity of assessment across the disciplines. Its goal is rather to

promote assessment methods that are generic to the missions of the respective disciplines. An outline of useful steps for developing a departmental assessment plan is provided in Section IV, while some of the assessment methods that are used at colleges and universities across the nation are listed in Section VI for the purpose of illustration, and sources and persons of assistance on this campus and elsewhere are provided by this policy initiative in Section VII.

II. Guidelines for Assessment

1. The goal of assessment is improved student learning. Curriculum design, faculty performance, and resources are undoubtedly related to student learning, but students, not the curriculum nor the faculty nor the budget, are at the center of focus.

2. The main process of assessment of graduates is designed by faculty and carried out by faculty with feedback from students. There can be institution-wide assessment of undergraduates on their entry to Manoa, and follow-up programs after graduation, but assessment at the time of graduation is the obligation of faculty in individual departments.

3. Each particular discipline has its own aims and faculty expertise, and so each department will have a unique assessment plan. It is likely, however, that some elements will be in common within colleges or other units of UHM. For example, departments in the creative or performing arts may choose methods of assessment that resemble one another, but that are distinct from methods selected by, say, departments within a professional school.

4. As they would with all forms of scholarship, faculty should treat assessment as a well-designed scholarly activity. Faculty can capitalize on the assessment activities that already exist, and then can build whatever additional well-coordinated data collection and sophisticated data analysis that they require.

5. Faculty must stay flexible, not only in matching the appropriate assessment instruments to their specific program, but also later in adjusting the assessment process in response to data that are obtained. Programs usually evolve over time; programs can be updated regularly to reflect changes in the field and in departmental priorities.

6. Programs will also be adaptive to the results of their assessment procedures. Faculty must analyze and use the data that are collected, beyond merely reporting results to students and to administrative records-keepers. Departmental faculty must be prepared to act on the results of the process, and change instruction, in order to improve students' learning experiences. Analysis will help indicate bottlenecks in learning, whether in advising, qualified instruction, or such facilities as libraries, laboratories, and computation. Information from faculty-designed assessment will aid

not only WASC, but also other external reviewers of the quality and effectiveness of Manoa's programs.

7. There will be a future need for assessment of students in graduate programs, which is also a responsibility of departmental faculty but not a part of this present statement. Assessment of distance learning may also become important.

8. Any process of assessment must take carefully into consideration the ethical issues involved in research and evaluation. Students should be treated as partners in assessment research. When possible, they should be informed of the purpose of the research, of any risks or benefits which may accrue from participation, and that their participation is voluntary. However, in some circumstances, informing students of one or more of the above may not be feasible and/or participation may not be voluntary. Different guidelines to ethical procedures are appropriate to each form of assessment.

III. Stages of Assessment

Assessment of students in contemporary American universities has several levels or stages, each with different aims and methods. Of the four levels for undergraduates listed below, number 3, assessment on graduation, the primary responsibility rests with each department or program. Faculty also have responsibilities at the other levels—entry, intermediate, and follow-up—in terms of approval and oversight and perhaps of participation. How each level will evolve at Manoa is uncertain, but their elements are outlined to show the possible relationships to the department-centered assessment on graduation.

1. At comparable universities, assessment on entry may be the responsibility of an admissions officer, or of a dean of undergraduate students. The aim is to have a benchmark reflecting the achievement level of each entering student. Methods shown on web sites include, for example:

- Every entering first-year and transfer student must have ACT or SAT scores or take placement tests in reading, writing, and mathematics;
- All students take a common final exam;
- All students take the American Council on Education-Cooperative Institutional Research Program survey on entry; and later, take the follow-up ACE-CIRP survey

2. Assessment relates to the aims of the General Education or core requirements, and as such, any evaluation of achievement of these will provide information for assessment on graduation.

3. Assessment on graduation—the focus of this *Handbook*—is the responsibility of

the faculty of each department. Some examples are given below in sections V and VI.

4. Follow-up assessment may be the responsibility of the University or of the department, or ideally of both, depending on the methods chosen. Targets might be departmental alumni, employers of graduates, drop-outs who do not complete a program, or other groups. Methods might include polls on graduation, interviews, questionnaires at 10-year intervals, and counts of success in licensing examinations.

Graduates disperse, and follow-up assessment will not be easy. Questions for each discipline include:

When and how often is the assessment made?

Can short-term skills for employment compare with long-term values for living?

How is the assessment-method chosen?

What size of a response is statistically significant?

If a questionnaire on relative alumni satisfaction is tied to some other mailing, such as fund-raising or athletic-ticket subscription, will the return be biased?

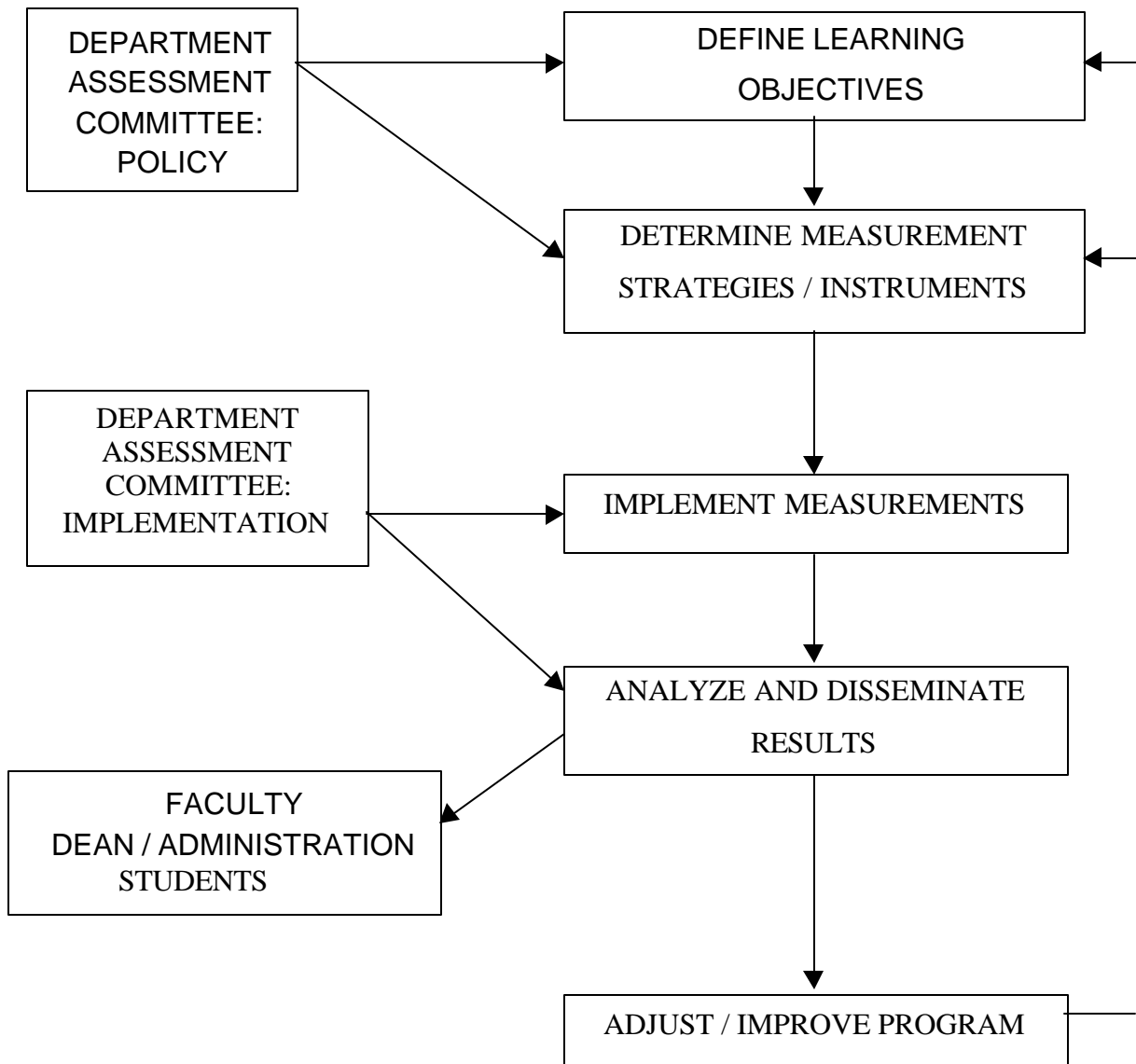
FIGURE 1
DEPARTMENTAL ASSESSMENT

PURPOSES

- Measure educational effectiveness, in order to
- Improve program
- Demonstrate accountability

ACTORS

ACTIONS



IV. Steps for Developing a Departmental Assessment Plan

The WASC report (Appendix A) specifies that

“An effective assessment plan:

1. insures faculty ownership.
2. establishes the student outcomes, instructional and co-curricular, to be assessed...
3. identifies appropriate indicators/measures to evaluate specific outcomes...
4. establishes a clear and consistent feedback loop between the assessment findings and faculty.”

Thus, this policy initiative suggests the following steps, which are outlined in Figure 1:

1. First, each department or program at Manoa creates a “Departmental Assessment Committee,” which generates a list of its own particular aims for undergraduate education. In the jargon of assessment, these are “student-outcome objectives.”

2. Second, the Departmental Assessment Committee creates a corresponding list of which specific method or methods are to be used to address each one of those particular aims.

3. Third, in some units, it may be appropriate to have a separate outcomes-assessment committee or undergraduate curriculum committee be responsible for these evaluations. A subcommittee of faculty would in any case implement the assessment procedures in each yearly cycle. The line of reporting following from this subcommittee to the Department Assessment Committee, the department chair, the dean of the School or College, and so on up to the UH administration.

4. Fourth, appropriate methodology and ethical procedures, as required in all research with human subjects must be observed. Safeguards with respect to confidentiality of records and identities, review of procedures for informed consent from students and faculty, and other such ethical concerns must be addressed. For example, names should be removed from the materials, and replaced by a serial number.

Further, reliability in observations should be guaranteed. For instance, student papers and portfolios and performance on embedded questions must be independently evaluated by more than one faculty member, at least one of whom is not an instructor in the course from which the material came.

V. Assessment Instruments and Methods Available to Assess Student Learning in the Major

Midwestern universities were among the most recent to meet the assessment requirement, and so their task was eased by study of earlier attempts at other institutions. WASC seems to be the last large US accrediting body to require assessment, and so we can look to the Midwest and elsewhere for guidance. Portions of the following paragraphs and lists are adapted from the web site of the University of Wisconsin, at www.wisc.edu/provost/assess/manual/manual1.html.

Assessment of student learning can be conducted using a variety of available instruments and methods. Many experts believe that a combination of assessment approaches can be the most effective way to measure student learning.

Faculty in a variety of academic programs at large and small research universities have tested and used a wide range of assessment methods to determine whether students were attaining prescribed educational goals. In this section, many of these assessment approaches will be presented, providing *Handbook* users with information that can simplify the development of assessment strategies. For all of these approaches, there are also specific procedures involved for the observance of ethical practices.

A. Direct Indicators of Learning

1. Capstone Course Evaluation

Capstone courses integrate knowledge, concepts, and skills associated with an entire sequence of study in a program. This method of assessment is unique because the courses themselves become the instruments for assessing student teaching and learning. Evaluation of students' work in these courses is used as a means of assessing student outcomes.

For academic units where a single capstone course is not feasible or desirable, a department may designate a small group of courses where competencies of completing majors will be measured.

Capstone courses provide students with a forum to combine various aspects of their programmatic experiences. For departments and faculty, the courses provide a forum to assess student achievement in a variety of knowledge and skills-based areas by integrating their educational experiences. Also, these courses can provide a final common experience for students in the discipline.

For instance, the Plowing Department (hypothetical academic name) might have three courses in Introduction to Plowing, Theoretical Plowing, and Applied Plowing.

An additional course in General Plowing, if designed and presented as a capstone course, would draw upon material in the previous courses, and continue into an intensive and advanced study of plowing. Thus the grade in the capstone course reflects the student's ability to synthesize and use what was learned in all four courses.

Special advanced undergraduate courses, seminars, and tutorials that exist in several Manoa departments have the elements of capstones. A number of upper division laboratory and field courses in the sciences either already are capstone courses or could easily become them. It is recognized that capstone courses may be considered inappropriate in such fields as literature or art history, where different genres or periods might be studied in any order.

2. Course-Embedded Assessment

The usual method of teacher evaluation of student learning has been the grades given in courses. Beyond that, a department or program can meet departmental objectives by setting its curricular requirements to cover the content in specific courses or a range of courses.

Assessment practices embedded in academic courses generate information about what and how students are learning within the program and classroom environment. Course-embedded assessment takes advantage of already existing curricular offerings by using standardized data that instructors already collect or by introducing new assessment measures into courses. The embedded methods most commonly used involve the development and gathering of student data based on questions placed in course assignments. These questions, intended to assess student outcomes, are incorporated or embedded into final exams, research reports, and term papers in senior-level courses. The student responses are then evaluated by two or more faculty to determine whether or not the students are achieving the prescribed educational goals and objectives of the department. This assessment is a separate process from that used by the course instructor to grade the exam, report, or term paper.

For example, a department may have the aim of including methodology (Analytical methods in geography; Introduction to historiography), or ensuring a range of experience (One course from Phil 300 to 318). It can then embed such experiences or contents within its required courses. Thus, Engineering accreditation may require a design component in each department's curriculum; design therefore would be embedded in an appropriate number of engineering courses.

Furthermore, a single department may have more than one set of courses that embed different objectives. For example, the Chemistry Department may have one objective to prepare its undergraduate majors for graduate school in chemistry, another to prepare pre-meds, and a third departmental objective to prepare

technicians. The three objectives may be met by three sets of courses that do not completely overlap either in numbers of courses or emphasis.

There are a number of advantages to using course-embedded assessment. First, student information gathered from embedded assessment draws on accumulated educational experiences and familiarity with specific areas or disciplines. Second, embedded assessment often does not require additional time for data collection, since instruments used to produce student learning information can be derived from course assignments already planned as part of the requirements. Third, the presentation of feedback to faculty and students can occur very quickly creating a conducive environment for ongoing programmatic improvement. Finally, course-embedded assessment is part of the curricular structure and students have a tendency to respond seriously to this method.

3. Tests and Examinations

In most cases, a test will be one part of a fully developed assessment plan. Tests are commonly used in association with cognitive goals in order to review student achievement with respect to a common body of knowledge associated with a discipline or program. Departments have traditionally used tests in assessment programming to measure whether students have acquired a certain process- and content-related knowledge.

Using this approach, there are two primary testing alternatives; first, locally developed/ faculty generated tests and examinations, and second, commercially produced standardized tests and examinations. Locally developed testing and examinations are probably the most widely used method for evaluating student progress. For assessing the validity of an academic program, examinations designed by the instructors who set the educational goals and teach the courses is often the best approach.

Locally designed tests have the problem of professors' "teaching to the test." If that can be avoided, a common part of a final exam (or of a separate test) given year after year may show whether or not the department is successful in meeting a specific objective.

Commercially generated tests and examinations are used to measure student competencies under controlled conditions. Tests are developed and measured nationally to determine the level of learning that students have acquired in specific fields of study. For example, nationally standardized multiple-choice tests are widely used and assist departments in determining programmatic strengths and weaknesses when compared to other programs and national data. Compilations of data on the performance of students who voluntarily take national examinations such as GRE and

MCAT enable faculty to discover useful data that often leads to programmatic improvements.

There are a number of advantages for using commercial/standardized tests and examinations to measure student achievement; first, institutional comparisons of student learning are possible. Second, very little professional time is needed beyond faculty efforts to analyze examinations results and develop appropriate curricular changes that address the findings. Third, in most cases, nationally developed tests are devised by experts in the discipline. Fourth, tests are traditionally given to students in large numbers and do not require faculty involvement when exams are taken by students.

Some of the more commonly used national tests include:

ACT—COMP (College Outcome Measures Program): This is an assessment instrument that measures knowledge and skills acquired by students in general education courses. Administered by ACT, Iowa City, IA.

GRE (Graduate Record Examinations): The GRE is widely used by colleges, universities, departments, and graduate schools to assess verbal and quantitative student achievement. Also, many discipline-specific examinations are offered to undergraduate students in areas such as Biology, Chemistry, Education, Geology, History, Literature, Political Science, Psychology, and Sociology. The GRE is published and administered by Educational Testing Services, Princeton, New Jersey.

Major Field Achievements Tests: Major field examinations are administered in a variety of disciplines. They often are given to student upon or near completion of their major field of study. These tests assess the ability of students to analyze and solve problems, understand relationships, and interpret material. Major field exams are published by Educational Testing Services, Princeton, New Jersey.

An extreme approach would be for the entire university to set aside one day per year or per semester in order to take standardized or locally produced tests. The data would allow the progress of individuals to be evaluated, and year-to-year changes in overall learning to be assessed.

Tests, whether standardized or local, are invaluable to follow progress in a formal discipline, such as language or mathematics, and also in disciplines whose upper division courses are built on prerequisites. In many instances, however, the use of standardized tests as indicators of innate ability, rather than level of achievement, is to be cautioned against.

Professional schools and colleges may want to include exams given by national

bodies. The Fundamentals of Engineering Examination of the National Council of Examiners for Engineering and Surveying, also called the "Engineer-in-Training" exam, is required of seniors in several universities. They take this exam as one step in qualifying for professional registration.

On the other hand, the business college at one of the same universities using the engineering exam as part of its assessment, had an unforeseen experience. It had planned to participate in an examination project developed by the AACSB (American Assembly of Collegiate Schools of Business), which is the college's accrediting agency. After some pilot use, the AACSB withdrew the exam, then started again. Later, a random sample of 54 graduating seniors enrolled in the capstone business policy course took a subset of the new AACSB exam, with questions selected by the college's division chairs and their respective faculty. Because the AACSB did not provide national or comparative norms, and because chairs felt that some of the AACSB questions are more traditional and do not represent some of the more recent theories and techniques taught to their students, the college, in consultation with colleagues at other AAU and AACSB schools, designed a new assessment instrument for its graduating seniors.

4. Portfolio Evaluation

The portfolios compiled by artists, photographers, and journalists are probably most familiar to us. Recently, faculty across the curriculum has appropriated portfolios for use in their own disciplines.

Portfolios are often characterized as authentic measures of assessment because the measure itself—the keeping of portfolios—is so intimately connected to the student's learning, as opposed, say, to large-scale, norm-referenced tests of knowledge. They are said to be valid assessment measures because they give a clear picture of what is being assessed—a student's actual writing and learning abilities and accomplishments.

The keeping of portfolios have a number of advantages: portfolios include a number of entries, most often chosen by the student herself, sometimes by the teacher, and, occasionally, by both; the number of entries can show learning progress over time; the entries can include drafts, showing the evolution of thinking within a single work; the entries can show work of different kinds, in various genres, styles, for different audiences, etc.; portfolios can be personalized through cover letters and reflective commentaries that describe the learning represented in the entries; the compiler can alter the portfolio as necessary to show new learning and thinking; entries can be presented in a variety of formats, textual and otherwise; and the completed portfolio—representing work in the core and the major carried out over a number of years—is most useful for job interviews and graduate school applications, and as an archive or collection showing intellectual and professional growth.

Portfolios are as valuable to the students who prepare them as they are to the department or institution that may use a sampling of them to measure student learning. Research tells us that the ability to write well is developed over time, hence portfolios offer an opportunity to display that growth. Marilyn Sternglass, in a longitudinal study of writing and learning at the college level, found that.

Students disadvantaged by first language or dialect or socio-economic upbringing or subpar preparation can acquire the critical, higher-level reasoning and writing demanded of a respectable undergraduate degree, but this will not happen in a course or in the first year but over the course of many years, and it will not happen in any predictable or linear way but fitfully, sometimes regressively, and always in concert with individual happenstance. (*Time to Know Them*, Lawrence Erlbaum, 1997).

It follows, then portfolios offer a possibility for effective assessment here at UHM, given our diverse student population.

Portfolios used for assessment purposes are most commonly characterized by collections of student work that exhibit to the faculty and the student the student's progress and achievement in given areas. Included in the portfolio may be research papers and other process reports, multiple choice or essay examinations, self-evaluations, personal essays, journals, computational exercises and problems, case studies, audiotapes, videotapes, and short-answer quizzes. This information may be gathered from in-class or as out-of-class assignments.

Information about the students' skills, knowledge, development, quality of writing, and critical thinking can be acquired through a comprehensive collection of work samples. A student portfolio can be assembled within a course or in a sequence of courses in the major. The faculty determine what information or students' products should be collected and how these products will be used to evaluate or assess student learning. These decisions are based on the academic unit's educational goals and objectives.

The portfolio evaluation process usually requires some calibration, with evaluators negotiating and agreeing on the traits by which the portfolios will be scored, and describing in some detail the range of possibilities within each trait. See the section below on developing primary trait scales the use of such scales for analyzing texts in a number of disciplines. In addition, the states of Vermont and Kentucky have introduced portfolio-testing on a statewide basis at the high school level; their experience and evaluation scales are adaptable at the college level.

Portfolios are compatible with the UHM curriculum because students already do so much writing in their five-course writing-intensive requirement. Papers written in those courses could provide the basis for the portfolio-keeping enterprise.

5. Pre-test/Post-test Evaluation

Pre-test/post test assessment is a method used by academic units where locally developed tests and examinations are administered at the beginning and at the end of courses or academic programs. These test results enable faculty to monitor student progression and learning throughout prescribed periods of time. The results are often useful for determining where skills and knowledge deficiencies exist and most frequently develop."

Any use of pre-test/post-test comparisons by academic units should incorporate proper educational measurement procedures for equivalent-form criterion- or norm-referenced test development, and demonstrate the reliability and validity of the forms through research on item analysis and the scaling of student knowledge and performance.

6. Thesis Evaluation

A senior or graduate student thesis, research project, or performance paper that is structured by the department to give students an opportunity to demonstrate a mastery of an array of skills and knowledge appropriate to the major can be a useful assessment instrument.

Just as with portfolio assessment and other more qualitative measures, such a form of evaluation risks being heavily localized in interpretation, and requires explanatory statements concerning procedures for evaluation, and summaries of the content and quality of thesis products by the academic units employing this measure.

7. Videotape and Audiotape Evaluation

Videotapes and audiotapes have been used by faculty as a kind of pre-test/post-test assessment of student skills and knowledge. Disciplines, such as theatre, music, art, communication, and student teaching, that have experienced difficulty in using some of the other assessment methods have had significant success in utilizing videotapes and audiotapes as assessment tools.

8. Primary Trait Assessment

This approach to assessment uses grading processes as the basis for institutional assessment. It is described in Walvoord and Anderson's *Effective Grading: A Tool for Learning and Assessment*.

Walvoord explains, "Primary trait analysis (PTA) is both highly explicit and

criterion-referenced. To construct a PTA scale, the teacher (1) identifies the factors or traits that will count for the scoring . . . ; (2) builds a scale for scoring the student's performance on that trait; and (3) evaluates the student's performance against those criteria."

Primary traits for a position paper might include the following: clear position on the issues; reasons for holding the position; support for reasons; original thinking; understanding of opposing views; anticipation of objections and questions; and sequencing of argument. The scale for scoring (sometimes called a rubric) would describe levels (excellent, average, poor) of response for each of the traits.

In answering assessment questions about courses as a group, the department or larger unit decides upon the sample of courses from which it will collect data and the specific data it will request. These typically include major tests and/or assignments that assess those goals, a PTA scale showing criteria and standards on the major tests and assignments, and possibly a record of the PTA scores that were assigned. Faculty agree to develop and submit assignments and evaluation criteria using PTA scales. Data are collected. Then a qualitative researcher analyzes the data collected to determine any one of a number of things, decided upon at the beginning of the assessment effort—the types of learning being expected of students, the sequence of skills taught in a department, what is required of graduates, strengths and weaknesses in student performance at a single point in time, and tracking student performance over time. Finally, the researcher reports results. In an example from the Walvoord and Anderson text, a researcher reports the following types of learning from general education data:

Problem-solving: used as a trait for at least one PTA in 46% of the courses

Generalizing from data: used in 42% of the courses

Questioning assumptions: used in 39% of courses

Analyzing a text: used in 79% of courses.

Walvoord and Anderson report that the approach takes faculty time, and faculty must be willing to make their grading processes public in the ways suggested above. But it also allows a great deal of room for individual faculty members or small groups of faculty to set their own assignments, tests, criteria, and standards for assessing student learning. According to Walvoord and Anderson, this approach, which values faculty diversity and can be integrated with other assessment approaches, "begins in the classroom and gathers careful data about current classroom practice. . . . It builds on faculty-determined criteria and instruments, and helps counter the disadvantages of standardized tests."

B. Indirect Indicators of Learning

1. External Reviewers

Peer review of academic programs is a widely accepted method for assessing curricular sequences, course development and delivery, and the effectiveness of faculty. Using external reviewers is a useful way of analyzing whether student achievement correlates appropriately with departmental goals and objectives. In numerous instances, recommendations initiated by skilled external reviewers have been instrumental in identifying program strengths and weaknesses leading to substantial curricular and structural changes and improvements.

2. Student Surveying and Exit Interviewing

Student surveying and exit interviews have become increasingly important tools for understanding the educational needs of students. When combined with other assessment instruments, many departments have successfully used surveys to produce important curricular and co-curricular information about student learning and educational experiences. During this process, students are asked to reflect on what they have learned as majors in order to generate information for program improvement. Through using this method, universities have reported gaining insight into how students experience courses, what they like and do not like about various instructional approaches, what is important about the classroom environment that facilitates or hinders learning, and the nature of assignments that foster student learning.

3. Alumni Surveying

Surveying of alumni is a useful assessment tool for generating data about student preparation for professional work, program satisfaction, and curriculum relevancy. As an assessment supplement, alumni surveying provides departments with a variety of information that can highlight program areas that need to be expanded or enhanced. In most cases, alumni surveying is an inexpensive way to gather data and for reestablishing relationships with individuals that want to help the program continually improve.

4. Employer Surveying

Employer surveys can provide information about the curriculum, programs, and students that other forms of assessment cannot produce. Through surveys, departments traditionally seek employer satisfaction levels with the abilities and skills of recent graduates. Employers also assess programmatic characteristics by addressing the success of students in a continuously evolving job market. The advantages in using

employer surveys include the ability to obtain external data that cannot be produced on campus, and the responses are often useful to help students discern the relevance of educational experiences and programs.

5. Curriculum and Syllabus Analysis

In a perfect planning/implementation cycle, once a department has defined its objectives, all phases of the curriculum and each individual course would almost automatically cover all the bases needed to provide each student the opportunity to learn the essential components of those objectives.

As one technique to keep a focus on the agreed-upon objectives, curriculum analysis provides a means to chart just which courses will cover which objectives. The chart then provides assurance to the department that, assuming certain sequences are taken by the student candidates for that major, they will in fact have the opportunity to learn those objectives.

Syllabus analysis is an especially useful technique when multiple sections of a department course are offered by a variety of instructors. It provides assurance that each section will cover essential points without prescribing the specific teaching methods to be used in helping the students learn those objectives.

VI. Examples from other Institutions

Here are three examples of assessment programs at Carnegie class Research 1 universities. The first, Purdue, is also a public land-grant institution, about twice the size of UHM. The second, Princeton, is private, much smaller, and places heavy emphasis on its undergraduate programs. The third, Colorado (at Boulder) is public, about half-again larger than UHM, but its range of departments is fairly comparable to that of UHM.

1. Extensive but highly flexible processes for undergraduate assessment exist at Purdue University. This example is from its Department of Biological Sciences.

The School of Science, which includes this department, has its own assessment activities at the School level. The School has its own Core, which includes and extends the University Core, and which the School evaluates constantly. Feedback has led to such new formal programs as Freshman Orientation, and Women in Science, and to additions to minors, emphasis on study abroad, better placement, and advising for new students.

Each department in the School of Sciences gives its general curriculum, lists its

objectives for the outcome of student learning, lists its assessment activities, and presents in detail its methods for analyzing the activities and incorporating their findings into improvement of the curriculum. This is quoted from the introduction to the statement of the Department of Biological Sciences: "... the Core is four semesters ... One of the more recent additions to the curriculum is a series of capstone courses which help students bring together all the skills and knowledge they have learned in a scientific discovery atmosphere. Success in these capstone courses is one of the best indicators that students have met the faculty's learning outcome objectives."

The objectives are these

1. To acquire knowledge and understanding of the basic principles of biology, and to understand the fundamental tenants of biological disciplines including diversity, development, genetics, ecology, physiology, cell biology, evolution, and biochemistry.
2. to read and be able to analyze scientific papers critically.
3. to be able to communicate clearly both orally and in writing.
4. to develop problem-solving skills for lifetime learning.
5. to design and implement experiments to test hypotheses (experience the process of discovery).
6. to explore the relationship between biology and society including ethical issues raised by current biological research."

These are the assessment tools (alphabetized) used by the Department of Biological Sciences:

- a) Alumni surveys and interviews
- b) Capstone courses
- c) Departmental Advisory Committee
- d) External peer review
- e) Faculty observations
- f) Focus groups [of graduating seniors]
- g) GRE and MCAT scores
- h) Independent research [data collection, oral presentation, written reporting ...]
- i) Internships
- j) Placement
- k) Research thesis
- l) Senior papers and projects
- m) Students; surveys and interviews of
- n) Students' evaluations of teaching
- o) University student-data queries and reports"

The Purdue lists vary from department to department. Statistics, for example, adds Exit interviews, and Professional exams, and skips Capstone courses and MCAT scores. Several departments term their advisory committee an Industrial Advisory

Committee. Some methods, e.g., Alumni surveys, external peer review, and Faculty observations, are common to all, and all want some aspect of research.

Departments in the natural sciences and professional schools at Manoa may want to shape their assessment programs along the Purdue lines. Indeed, with some modifications, any UHM department or program might follow this highly flexible model.

2. Honors programs exist mainly at small colleges and universities. Princeton University, which for nearly a century has assessed undergraduate learning as separate from grades in courses, provides the following model. Commonly, inclusive honors programs are at private institutions with a strong tradition of undergraduate education and a student-faculty ratio sufficiently small to allow the high demands on faculty time. All students in the college are in the program ("inclusive"), in contrast to Manoa's current honors program ("selective"). Whether honors are given at graduation depends on how well the student performs in requirements that are in addition to the normal course work. The normal course work includes a department's course-embedded objectives, whereas the honors work would have such aims as developing independence in learning; experiencing the process of discovery; organizing, conducting, and presenting a substantial piece of scholarship; and demonstrating the ability to draw information from several courses to bear on a new problem.

A department-wide or college-wide honors program might have these three components. Each would be required of all majors, and each would count one-third towards honors.

(1) Junior Independent Work, common to all students. A series of large and small tasks would be laid out, for which all students in the major are responsible over the period of two semesters. Help would be available, but the department's expectation would be that the student would grow increasingly independent. Majors might, for example, attend weekly departmental seminars, audit one course beyond their registration, and read from a list of classical and current books and papers. They might be given a textbook, syllabus, and web sites and be told to learn some aspect of the discipline, perhaps by the unit mastery method.. Other assignments would depend on the discipline (Attend six plays and write a one-page review of each; Perform 40 hours of community service relevant to the discipline; Assist a post-doctoral researcher in his or her laboratory for one afternoon per week; and so on). Oral or written exams by faculty at the end of the two semesters would evaluate what was learned.

(2) Senior Thesis, individual to each student. With the advice and consent of two assigned faculty members, each student would chose a topic for scholarly research. The two would act as mentors in research methods, and review outlines and drafts of

chapters. They would assist the student in decisions about changes in direction or scope, and give general guidance when asked. Two other faculty members would read and grade the final copy.

In some programs the thesis requirement may take a form other than the traditional bound paper with its abstract, footnotes, and references. At Princeton, Architecture required a design project, with a physical model and tables of specifications, and but a modest written presentation. Geological Engineering required the statement of a problem, a map prepared in the field, and a proposed solution to the problem based, in part, on the map. Musical compositions, videos, tables of data from polls, each accompanied with a succinct written description, have been used as theses.

(3) Senior comprehensive exam, common to all students. A one or two-day set of written and oral exams given and graded by a faculty committee two weeks before the semester's examination period would attempt to discover how the student can integrate material that was presented in different courses. Thus the senior comprehensive exam acts as a common capstone for all majors.

Manoa's departments in the arts and sciences and perhaps in some of the professional schools may want to use or modify an inclusive honors program.

3. Intensive, department-specific assessment programs characterize the University of Colorado, at Boulder. Each department does not use the range of several methods as departments do at Purdue, nor there is not the general honors template for all departments as at Princeton. Rather, each Colorado department selects two or three methods it believes most appropriate. Departments expend considerable faculty time in evaluating results and in refining their assessment programs over the years. The example below is from the History Department (copied from the department's web site).

Learning objectives for the history department's students are published in the university catalog as follows:

- “The undergraduate degree in history emphasizes knowledge and awareness of:
- the main topics in the political, social, cultural, and economic history of the United States, from its origins to the present;
 - the main topics in the political, social, cultural, and economic history of western civilization, from its origins in antiquity to the present;
 - the main topics in the political, social, cultural, and economic history of one or more geographic areas outside Europe and America;
 - one area of the world in more detail--the United States, Europe, or world areas - - acquired through upper-division study; and
 - methodology in historical studies.

“In addition, students completing the degree in history are expected to acquire the ability and skills to:

- research and conduct an investigation, consulting appropriate works for developing a bibliography;
- distinguish between primary and secondary sources, analyze arguments and interpretations, and recognize interpretative conflicts;
- interpret evidence found in primary sources and develop an historical argument based on and sustained by the evidence available; and
- produce historical essays that are coherent, cogent, and grammatically correct.”

The main procedure for assessing the success of students in learning these topics and skills is through the evaluation, by a committee of faculty, of a sample of papers written in senior seminars. These outcomes assessment procedures have evolved over the years as follows:

“Each year, fifteen percent of the papers submitted by senior history majors in 3000-level seminar courses are selected for grading by the Department's Undergraduate Studies Committee. These papers have evidence of the author's name and the class for which they were written removed, and are assigned a code number; then the committee readers, operating without further knowledge, rate each paper as 2 (Very Good), 1 (Satisfactory), or 0 (Unsatisfactory). Each year since the department began using this scale (1989), the average skills ratings for one-quarter to one-half of the papers reviewed have been in the highest category and all or almost all have been rated at least Satisfactory; typically half of all papers receive average knowledge ratings in the highest category. Scores have remained remarkably consistent from year to year.

“The Undergraduate Studies Committee has worked to refine the rating procedure over the years, increasing rater agreement by defining the scoring categories more and more rigorously and by emphasizing measurement in terms of the department's skills and knowledge statements. From 1987 through 1994, outcomes assessment in History focused on the department's skills goals. Assessment of the knowledge goals was added in 1994-95.

“In 1992-93 and 1993-94 the Undergraduate Studies Committee analyzed the assessment results to see if there was any relationship between the students' scores and the faculty rank of the course instructors. The analyses indicated no relationship - that is, students in courses taught by junior faculty performed as well as those in courses taught by senior faculty. With no relationship found in either year, the analysis was discontinued in 1994-95, although to ensure representativeness the committee continues to sample papers from seminars taught by instructors of all ranks.

“Through 1991-92, each paper was independently read by all six members of the Undergraduate Studies Committee. Between 1992-93 and 1996-97, the pool of papers to be assessed was divided into two sets: papers from assignments stressing research skills and papers from assignments stressing other analytic skills. Each set was evaluated on the basis of the department's goals by a three-member subcommittee. Each member independently rated all the papers in the subcommittee's group.

“In 1996-97, in recognition of the department's requirement that all 3000-level papers incorporate a research component, the committee revised its evaluation procedure yet again. Papers were divided into subject-matter groupings—U.S. history, European history, and World Areas -- and read by subcommittees made up of two professors from each field. This allowed for closer monitoring of content (knowledge goal 4) and enhanced the evaluators' ability to assess the level of skills in research as well as in argument and writing (skills goals 1-4). Evaluators were also encouraged to rate papers fractional, using a 0.0 to 2.0 scale to assign separate scores for Content (knowledge) and Skills, as well as an Overall rating. In the event that the two evaluators differed in any category by 0.5 or more, the paper was given to a third reader, who made an independent assessment”.

The History Department's evaluators rate each paper in all of the following categories. The Overall Rating is not a sum, and need not be an average, of the component scores:

“1. Argument: Does the essay propound a thesis? Does the writer support it with an adequate argument? Is the argument coherent? Convincing?

2. Evidence: Does the writer use primary source evidence to support his or her argument? Does the writer demonstrate analytical and critical skills in using these sources? Does the writer take proper note of their biases?

3. Historiography: Does the writer use other historians' work appropriately to frame his or her argument? Does the writer take account of interpretations that diverge from his or her own? Does the writer demonstrate critical skills in the use of secondary sources?

5. Expression: Does the writer use language skillfully?

6. Form: Does the writer adhere to the normal rules of citation in footnotes, bibliography, etc.? Are the citations adequate to allow the reader to form a critical opinion of the range and use of sources?

7. Overall Rating: Bear in mind that this is a summary judgment of the paper's quality, and need not reflect an average of the categories above. Such factors as creativity and originality should be considered in this category.

8. Comments (optional)”

Here is a table of results:

"HISTORY OUTCOMES SCORES, BY FIELD, 1997-98

Area	Overall	American	European	World
Department	(N=19)	(n=8)	(n=7)	(n=4)
Argument	1.3	0.91	1.43	1.60
Evidence	1.1	0.68	1.22	1.65
Historiography	1.2	0.83	1.26	1.75
Expression	1.2	0.93	1.40	1.28
Form	1.1	0.91	0.99	1.28
Overall	1.2	0.88	1.35	1.48"

Although this example is for history alone, faculty at Manoa will find much that is useful at virtually all departmental sites for the University of Colorado.

VII. Sources of Assistance for Manoa Faculty Developing Departmental Assessment Plans

Individuals at Manoa who have thus far indicated a willingness and expertise in advising departments are:

J. D. Brown	Second Language Studies	Neil Milner	Political Science
John Haig	East Asian Languages	Karl Minke	Psychology
Tom Hilgers	Manoa Writing Programs	Deane Neubauer	Political Science
Thom Hudson	Second Language Studies	Richard Pratt	Public Administration
Joy Marsella	English	Monica Stitt-Bergh	Manoa Writing Progs
		Ken Tokuno	Office of VP

Internet sites that might be listed include those of Colorado, Wisconsin, Portland, and WASC:

<http://www.colorado.edu/pba/>
<http://www.wisc.edu/provost/assess/manual/manual1.html>
http://www.clas.pdx.edu/assessment/program_assessment.html
<http://www.wascweb.org/senior/standards/integrated.html>