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EXECUTIVE SUMMARY

The purpose of this manual is to provide resources for faculty and staff who wish to assess student outcomes in their majors, programs, courses, or other initiatives. It is not a directive or a mandate telling faculty what they must or should do. Ultimately, the decision whether to assess student outcomes, how to accomplish the task, and what to do with the results belong entirely to the personnel involved.

While academic outcomes assessment is often thought of as being exclusively related to students’ proscribed courses of study in the general education curriculum or in the disciplines, other functional areas outside of the academic departments (such as learning communities or internship programs) may be able to evaluate their effectiveness through outcomes assessment. Throughout this document, most material that refers to faculty procedures can also be utilized by such non-departmental areas.

Often those involved in academic outcomes assessment are full-time faculty or staff, but part-time faculty may also be able to make valuable contributions. When personnel do decide to embark on the outcomes assessment process, it is they who set the goals and objectives. During the process, they may choose to consult with faculty from other programs, the Associate Provost for Institutional Effectiveness or the Office of Institutional Research and Assessment, as well as other stakeholders such as Middle States, external accrediting organizations, and, of course, this manual.

The overarching rationale for academic outcomes assessment at the College of Staten Island to understand the impact of the College’s educational offerings on students, with the objective of the improvement of teaching and learning. Outcomes assessment can provide us with evidence to indicate whether we are achieving our goals. When the goals and results are not in agreement, this suggests that either the goals need modification or something should be done to improve the results. Once again the decision on which approach to take rests with the appropriate faculty. Faculty involvement in academic outcomes assessment allows them to demonstrate directly that their programs are accomplishing what they intend. It allows faculty to make improvements to their programs based on objectives and evidence rather than anecdotes or gut feeling, and it helps empower arguments for additional resources.

This manual details several assessment processes and techniques. The possibilities can be overwhelming, but resources at CSI are available to help faculty at each step of the assessment process. In that regard, faculty are encouraged to comment on this manual and make suggestions for improvement.
PART 1: BACKGROUND AND PRINCIPLES

I. INTRODUCTION

Academic outcomes assessment (AOA) is a process whereby faculty and staff can determine whether their various goals and objectives have been realized. To achieve this end, it utilizes a variety of methods and measures. The resultant data provide feedback which can be used to emphasize strengths and improve areas where goals are not fully realized. Thus, AOA is part of a continual cycle of development, testing, and modification, all with the sole purpose of helping academic initiatives provide the very best for the students they serve. The purpose of this document is to help department chairs, program heads, faculty committees, and others interested in educational improvement to develop a meaningful outcomes assessment process. To that end, it will briefly describe the context and background of the assessment efforts at CSI as well as the governing principles. It will then describe some of the methodologies and measures used for assessing student outcomes. An outline of helpful steps in the development of a program assessment effort is also provided.

Note: Several parts of this manual are adapted or derived from resources listed in the Reference section.

A. Purposes of Assessment

The Ultimate Goal of Outcomes Assessment is to Understand and Demonstrate the Impact of Educational Offerings on the Student, With the Objective of Improving Teaching and Learning

Outcomes assessment has often been said to serve two distinctly different purposes: accountability and improvement. A thorough discussion of this dichotomy can be found in the 1995 CSI Assessment Plan, among other literature. There is no doubt that demands by outside institutions for accountability are often the impetus for academics to consider the issue. However, faculty are typically left to develop their own goals and assessment plans. Therefore, they have the opportunity to use the momentum begun under the demands for accountability to shift the focus to assessment for the purposes of understanding and improvement. To achieve that end, a college, program, or course compares its actual performance to its desired performance as revealed by locally developed outcome measures.

A related and overlapping dichotomy has been that between summative and formative assessment or measures. Summative assessment looks at results at the end of a process, and often compares them to some standard or norm. Such assessment attempts to tell what students know or can do, what happened, or what was learned. Formative assessment evaluates performance in subtasks during the learning process with the goal of addressing deficiencies. It is apparent that these variations parallel the dual purposes of assessment cited above. However, they are not entirely
synonymous. Both summative and formative measures of student learning can provide evidence to support improvement. Throughout this document, the focus is on assessment for understanding and improvement, as outlined in the principles that follow.

B. CSI’s Philosophy of Assessment

The principles governing outcomes assessment at CSI, discussed in detail in the 1995 CSI Assessment Plan, are as follows.

1. The primary purpose of outcomes assessment should be to understand and improve College programs and services through a process of self-examination.
2. The outcomes assessment program should derive from, and reflect, the overall mission and character of the College as a senior college of the City University of New York.
3. Outcomes assessment should be a continuous process of self-examination and modification where appropriate.
4. Assessment should be designed to be as direct and simple as possible.
5. The focus of outcomes assessment should be on programs and services, not on individual students, staff, or faculty.
6. Assessment should be sensitive to, and respect, variation among members of the College community and programs of study.
7. The faculty of academic departments are best suited to design the assessment of outcomes related to their programs.
8. Outcomes assessment should be multidimensional, so as to yield a comprehensive understanding of the impact the College has on students and the wider society.

C. History of Outcomes Assessment at CSI

Although some question why the College (and higher education in general) is so concerned with outcomes assessment “all of a sudden,” the current level of activity is merely a continuation and evolution of a long history of assessment at both the national and College level. Many early assessment projects at CSI were housed in the Office of Institutional Research, which acquired its first full-time director in 1988. These were primarily data-gathering activities, used to support administrative reporting needs and ongoing program reviews. As interest in outcomes assessment grew both nationally and locally, the office was renamed “Institutional Research and Assessment.”

A College-wide Outcomes Assessment Committee, comprising members drawn from all constituencies of the College community, was formed in 1993. That committee completed its mission and was suspended with the development of the 1995 CSI Assessment Plan. However, as a result of recommendations made in CSI 2000: The Middle States Report, a new Academic Outcomes Assessment Committee (AOAC) was formed, and an Institutional Effectiveness Committee (IEC) was convened to facilitate assessment activity outside of the academic
departments and programs. The AOAC has representation from all academic departments at the College. It serves as a forum to discuss and determine academic assessment policy as well as a resource to programs developing and evaluating their own outcomes assessment plans.

With the creation of the position of Associate Provost for Institutional Effectiveness in 2008, the College entered a third phase of assessment activity. The Assessment of Special Programs committee (ASP) was added to the existing AOAC and IEC structure, to help facilitate the assessment of college constituencies that are outside of the academic departments but may still have assessable academic outcomes. Additionally, the leadership of the AOAC was reviewed and revised to ensure that academic assessment concerns remained fully within the faculty domain.

II. ASSESSMENT ISSUES

A. The Role of Faculty in Outcomes Assessment

Faculty play an essential and comprehensive role in AOA. They define the goals, select the methods, collect the data, and determine what consequences student outcomes information has in their programs and courses. These tasks may demand considerable effort and time. Yet they focus directly on the primary goal that faculty continually strive to achieve: helping students gain knowledge and abilities required for them to lead meaningful and rewarding lives. Most faculty are interested in improving the processes of teaching and learning, and outcomes assessment can contribute significantly to the achievement of that goal.

Student learning is not dependent solely on an instructor’s ability to convey content; it also depends on the ability to assess the depth of student understanding, to identify sources of student difficulties, to evaluate a student’s ability to apply knowledge, to determine the effectiveness of specific teaching strategies, and to develop more successful pedagogies when necessary. In that sense, AOA is not an added responsibility, but an already essential component of the faculty’s instructional responsibility. The AOA process simply encourages efforts to make assessment systematic, by developing a described framework whereby faculty efforts to improve teaching and learning can be repeated, recognized, and shared by colleagues. Significant non-intrusive administrative commitment and support is also vital. In other words, it is essential to develop a culture of assessment throughout an academic institution, based on a shared institutional curiosity.

Despite the critical role that faculty must play in meaningful academic assessment, there is often some reluctance or even resistance on the part of faculty to become involved. Some of this resistance has to do with the concern that outcomes data may have negative consequences for programs or personnel, which may in turn derive from the perception that assessment is an exercise in accountability. It is therefore crucial to emphasize that the focus of AOA at CSI is on assessment for the purposes of understanding and improving student learning. That academic outcomes assessment will not be used to evaluate specific individuals has been clearly stated in
CSI’s policies from the outset. Faculty evaluation uses different methods than AOA and it is performed for different purposes. In addition, it is regulated by employee contracts.

**Using Grades for Assessment**

Overburdened faculty sometimes answer the preceding question by stating that course grades ought to be enough to evaluate student learning. The assignment of a grade to an individual student provides a summary measure about the student’s performance in the class and, perhaps, tells something about the standards of the teacher. It does not usually convey direct information about which of the program goals and course objectives for learning have been met – or any granular understanding of how well the student has met them. The grade distribution for the class as a whole speaks to the relative performance of the group of students, but not about what or how much they have learned or can do. Course grades alone do not necessarily help students improve, nor do they tell instructors what aspects of a course students may have had difficulty with, but grades may form part of a more comprehensive assessment plan. To be meaningful, assessment should provide both students and faculty with information for improvement at both course and program levels. The best discussion of the use of grades in assessment has been provided by B. Walvoord and V. Anderson (1998).

**Assessment and Academic Freedom**

“Assessment is a group activity that requires a great deal of openness.” (Banta & Palomba, 1999).

“[T]he ‘four essential freedoms’ of a university [are] to determine for itself on academic grounds who may teach, what may be taught, how it shall be taught, and who may be admitted to study.” (Frankfurter, 1957).

Some faculty view assessment as a threat to academic freedom. Teaching is considered to be a very private activity, and faculty do not usually wish to open themselves to being judged on the results of evaluative endeavors. It should be stressed again at this point that it is not appropriate to use academic outcomes assessment for the evaluation of instructors.

Assessment requires the sharing of information and a commonality of goals that may cause individuals to be uncomfortable at times. One of the strategies of dealing with these issues is to discuss them, at appropriate times and meetings, in order to find ways of addressing them. The absence of a public debate will allow for such sources of faculty reluctance to interfere with the effectiveness of AOA programs. Articles such that written by J. Wergin (1999) provide some thoughts on the benefits of assessment for faculty, and its intersection with principles of academic freedom.
B. The Role of Students in Outcomes Assessment

Obviously students have a significant stake in academic outcomes assessment, since it is their academic growth that is the ultimate goal of any outcomes assessment initiative. Students are also significant sources of much of the data. When assessment activity is transparent, or is part of the student’s coursework requirement (i.e., course-embedded assessment), student participation does not usually pose a problem. However, some assessment methods (e.g. surveys or focus groups) may require students to be willing to participate and to perform optimally. Non-responders or students who do not take a project seriously can call into question the validity of outcomes data. To address this issue, various approaches have been devised to enhance student motivation and performance, including providing rewards such as money, food, benefits around the college, priority registration, etc. An assessment researcher experienced in working with students noted that “the value of pizza cannot be overstated.”

Upcraft and Schuh (1996, pp. 298-305) address the importance of ethical conduct with students regarding assessment activities. Their recommendations can be summarized as follows:

- Explain the purposes of assessment projects to students, and carry out projects as described
- Where possible, give students the right to decide whether they will participate in assessment activities
- Ensure that participation in assessment does no harm. Information that is collected should be treated confidentially
- If assessment results are to be published or presented at a conference, formal IRB approval is required
- If assessment results will not be published and the survey is anonymous, formal campus IRB approval may not be required, but the purpose of the research and the fact that participation is voluntary must be explained to participants
- If assessment results will not be published and the survey responses can be linked to an individual, formal campus IRB approval is not required, but the purpose of the research, the fact that participation is voluntary, and actions to ensure confidentiality must be explained to participants
- If data from student records are used in assessment research, all requirements of the Family Educational Rights and Privacy ACT (FERPA) must be observed.

C. Ownership and Use of Outcomes Data

Outcomes assessment data are valuable only if they inform policy or practice. Since the purpose of AOA is to understand and demonstrate the effects of courses or programs, this means that learning outcomes should be considered in decisions about course design and program requirements. Since those activities are the province of faculty, it is they who, first and foremost, must claim ownership of outcomes measures. Faculty for whom a given outcome measure holds most interest should be
the first (and perhaps only) ones to see the results. If assessment activity is focused on a single course with multiple sections, all faculty teaching the course should evaluate and act on the results. An assessment of students at the end of their major would belong to the faculty teaching in the major. Of course, faculty groups could include other faculty from within (and outside of) a single discipline for a more dispassionate look at the findings. Those who set the goals and objectives and choose the methodology should be responsible for the decisions regarding how the results will be evaluated and disseminated.

The next level of discussion should be the CSI AOA committee, which serves as a resource and advisory body for all academic assessment activities at CSI. This committee has the responsibility to provide an institutional perspective on assessment, and needs to be given a chance to do so. Academic assessment projects and cohesive program-level plans project will evolve only through the constructive interaction between faculty groups involved in all aspects of outcomes assessment.

Beyond the AOAC is the CSI Institutional Planning Committee, which has the overall responsibility to lead the College, being mindful of the College’s mission and other plans that influence its direction and functions. It is this committee that has the ultimate responsibility for recommending and/or ensuring that resources (including assessment data) are used effectively for institutional advancement.

Throughout the processes of discussion of findings and formulation of recommendations, there must be a commitment to the need to share results, with wisdom, discernment, and solid judgment, in a transparent manner across the College.

Finally, after changes are instituted, the cycle of assessment starts again in order to reassess students’ ability to reach or exceed the desired outcomes (see Figure 1.). AOA is, manifestly, a never-ending, circular process of assessment, reflection, change, and re-assessment.

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Figure 1.
The Teaching-Improvement Loop

Learning

Teaching

Assessment

Improvement

Adapted from Framework for Outcomes Assessment, Middle States Commission on Higher Education, 1996.
D. Areas of Academic Assessment at CSI

The principal impetus for engaging in AOA is the overall mission of the college, followed by the equally important goals and objectives of programs, majors, areas of concentration, and individual courses. The mission statement of the College of Staten Island emphasizes several academic goals that have implications for outcomes assessment. Specifically, comprehensive AOA at CSI – as at most other institutions across the country – needs to focus on three broad assessment domains: General Education, Learning in the Major, and Individual Courses.

General Education
Even though the general education goals at CSI are sometimes perceived as separate to those in the disciplines, they share many of the same goals as the majors such as developing critical thinking, communication skills, or cultural awareness. Additionally, the goals of general education should not be considered to be exclusively the role of the general education curriculum, but should instead permeate the entire spectrum of the College’s academic offerings.

Learning in the Major
Faculty in each program, department, or discipline should be able to assess students’ learning prior to graduation. The specific capacities that students should develop, of course, will vary from major to major. Thus, each degree-granting program or department should carefully define its goals, course objectives, and desired outcomes. To assess the end-results of studies in majors, many U.S. colleges require capstone courses or senior seminars; several CSI departments offer such senior seminars for their majors.

Assessment of Individual Courses
The assessment of courses serves the need to improve teaching and learning at the level closest to the true practice of education – the individual classroom. But, when the individual experiences of teachers are shared with others, course-level assessment can provide data for the assessment of a program and/or major. Course assessment can also address aspects of the general education goals of the college, even when the course may not be a specific general education requirement.

Many academics have developed creative and meaningful classroom assessment techniques, and it is increasingly common for these to be published or otherwise shared. This manual will describe several of the more thoroughly documented and tested classroom assessment methodologies. It is also expected that, as CSI faculty experiment with outcomes assessment in their classes and programs, their efforts will be recognized and their successes will be shared with colleagues. This will help reinforce the “culture of assessment” that has been established at the College.
PART 2. THE ASSESSMENT PROCESS

I. FIVE BASIC STEPS OF ACADEMIC OUTCOMES ASSESSMENT

Although the details of specific assessment programs may vary, meaningful outcomes assessment generally involves five basic steps. The AOA process entails:

1. Defining Goals
   What does the College want to accomplish with a general education requirement?
   What knowledge and skills do faculty in a program expect from majors upon graduation?
2. Identifying Objectives
   What specific student actions or behaviors would demonstrate progress towards the goals that have been established?
3. Developing Outcomes Measures
   What evidence could be gathered to demonstrate that the identified objectives are being met?
4. Evaluating Results
   The information gathered in step 3 should be analyzed quantitatively, qualitatively, or by some combination of both.
5. Formulating Modifications
   Analysis will reveal how well the objectives have been attained. This information may be used where appropriate or possible to institute changes that bring outcomes more in line with stated objectives. Alternatively, results may suggest modification of the goals or objectives themselves.

Once the process has produced modifications, they, too, should be assessed in the continual progression toward improvement.

Much of the material in the following guidelines is taken or adapted from a variety of sources, particularly from the following institutions:

- University of Massachusetts Amherst
- St. Cloud State University
- Texas A&M University
- Ball State University
- University of Wisconsin - Madison
II. DEVELOPING GOALS AND OBJECTIVES

Goals are broad, long-range general statements about the purposes of education. Goals are used primarily in policymaking and general planning, and are usually applied at the level of a program or major.

Objectives are brief, clear statements that describe the desired learning outcomes of instruction. Attention is focused on the specific types of performances that students are expected to demonstrate at the end of instruction. In academic outcomes assessment, objectives are applied at the course level – either to individual courses or clusters of interchangeable courses.

Goals and objectives are distinguished primarily in terms of the level of specificity. Goals express intended outcomes in general terms and objectives express them in specific terms. Goals are written in broad, global, and sometimes vague, language. Objectives are statements that describe the intended results of instruction in terms of specific student behaviors. “Objectives” is sometimes incorrectly interchanged with “outcomes,” but the two terms are subtly different: objectives are the intended results or consequences of instruction or activities, whereas outcomes are the observed results that were achieved. Objectives specify what is expected and describe what should be assessed; outcomes are behaviors and products generated by students after instruction and are the objects of assessment.

Goals and objectives are developed and written by the faculty involved in the particular AOA area (e.g. the general Education Committee, faculty teaching in a program/major, or individual faculty teaching a particular course). There is no infallible procedure to guarantee meaningful goal development, but some guidelines are provided here.

A. Goals

The development of goals should involve discussions between all of the stakeholders. In addition to the faculty, this could include students, alumni, and staff. Some approaches to developing assessable goals include activities like the following:

- Describe the ideal student: What does the ideal student in a program or major know?
- What are his/her skills and values? Describe your alumni in terms of such achievements as career accomplishments, lifestyles, citizenship activities, and aesthetic and intellectual involvement.
- Review instructional materials: What do these materials indicate about the importance of various learning outcomes? These might be divided into broad categories such as: content or subject knowledge; skills, abilities, or capabilities; values, attitudes, or beliefs. Helpful materials include course syllabuses, assignments, tests, textbooks, handouts, study guides. etc.
Review documents that describe your program: Many written documents state or hint at some of the learning goals. These include brochures, catalog descriptions, student handbooks, accreditation reports, self-studies.

Review goals from an external unit: Goals developed by other programs at the college or by similar programs at other colleges can be helpful guides to defining your own program goals.

The end result of these goal development activities should be goal statements that are assessable. Such goals state: what is to be learned (content, skills, values), what level of learning is expected (criteria and standards of achievement), and the context in which learning takes place (applied learning, environmental constraints).

Once a list of goals is developed, they should be discussed among the program participants so that they can be narrowed down to a consensual list of the five to ten most important ones. A typical discovery is that the full list of goals, though admirable, is far too long to be accomplished or assessed. Reduction of the number of goals to a manageable number may begin by asking which goals are actually restatements of others with a different emphasis, and which are beyond the influence of the program.

B. Objectives

Learning objectives should be related to the defined general goals, and may be derived from many of the same sources that gave rise to those goals (e.g. syllabuses, course assignments, faculty expertise, internships). These statements about what a particular initiative will attempt to achieve (e.g., what does a course aim to do) should be regularly reviewed and updated by taking into consideration collected assessment data, and changes made in the course or program.

Learning objectives can be divided into two classes:

1. Mastery Objectives
   These describe the minimal performance expected of students at the end of a course or group of courses. They may define specific knowledge or skills. Examples might be that students can:
   - balance chemical equations
   - articulate the theme in a reading selection
   - evaluate the source of information
   - read a blueprint or wiring diagram
   - explain the role of a major historical figure
   - utilize design principles in an art project

2. Developmental Objectives
These describe varying degrees of student performance dependent on the skill level attained at the end of instruction. An example is the degree to which a student understands a particular scientific theory:

- student is able to state the theory
- student is able to give examples of the theory
- student is able to apply the theory

A popular source of educational objectives is the work of Benjamin Bloom, commonly referred to as Bloom’s Taxonomy. Most of Bloom’s emphasis is on objectives for the cognitive domain, although his Taxonomy also includes the affective and psychomotor domains. A summary of these domains follows along with some of verbs indicating the outcomes.

Cognitive Domain

Knowledge: The ability to recognize or recall previously learned information.

Q: Which part of the heart receives blood from the lungs? Who painted “Starry Night”? Words typically used: define, describe, identify, list, recall, recognize, remember, who, what, where, when.

Comprehension: Understanding the meaning of informational materials (such that it can be organized and arranged mentally).

Q: What do you think Hamlet meant when he said, “to be or not to be, that is the question?” Words typically used: describe, compare, contrast, rephrase, put in your own words, explain the main idea, summarize.

Application: Using previously learned information to reach an answer in new and concrete situations. Solving math word problems is an example.

Q: According to our definition of socialism, which of the following nations would be considered to be socialist? Words typically used: assess, administer, apply, chart, compute, classify, develop, show, use, choose, employ, give an example, solve.

Analysis: Breaking down informational materials into their component parts, examining such material to develop divergent conclusions by identifying motives or causes, making inferences, and/or finding evidence to support generalizations.

Q: Why was Israel selected as the site for the Jewish nation? After studying the French, American, and Russian revolutions, what can you conclude about the causes of a revolution? Words typically used: break down, differentiate, distinguish, outline, prioritize, subdivide, identify motives/causes, draw conclusions, determine evidence, support, analyze, why.
**Synthesis:** Creatively or divergently applying prior knowledge or skills to produce a new or original whole.

Q: What’s a good name for this invention? Write a letter to the editor on a social issue of concern to you. Make a collage of pictures and words that represents your beliefs and feelings about the issue. How would the U.S.A. be different if the South had won the Civil War? What would happen if school attendance was made optional? What is the next likely development in popular music?

Words typically used in synthesis questions: adapt, combine, generate, formulate, predict, produce, write, design, develop, synthesize, construct, how can we improve, what would happen if, can you devise, how can we solve.

**Evaluation:** Judging the value of material based on personal values/opinions resulting in an end product, with a given purpose, without real right or wrong answers.

Q: Do you think schools are too easy? Is busing an appropriate remedy for desegregating schools? Do you think it is true that “Americans never had it so good?” Which U.S. senator is the most effective?

Words typically used: appraise, compare and contrast, critique, criticize, defend, interpret, judge, justify, support.

**Affective Domain**

The Affective Domain addresses interests, attitudes, opinions, appreciations, values, and emotional sets.

**Receiving:** The student passively attends to particular phenomena or stimuli (classroom activities, textbooks, music, etc.) The teacher’s concern is that the student’s attention is focused. Intended outcomes include the pupil’s awareness that a thing exists.

Objectives: listens attentively, shows sensitivity to social problems.

Terms: asks, chooses, identifies, locates, points to, sits erect, etc.

**Responding:** The student actively participates. The pupil not only attends to the stimulus but reacts in some way.

Objectives: completes homework, obeys rules, participates in class discussion, shows interest in subject, enjoys helping others, etc.

Terms: answers, assists, complies, discusses, helps, performs, practices, presents, reads, reports, writes, etc.

**Valuing:** The worth a student attaches to a particular object, phenomenon, or behavior. Ranges from acceptance to commitment (e.g., assumes responsibility for the functioning of a group).

Attitudes and appreciation.

Objectives: demonstrates belief in democratic processes, appreciates the role of science in daily life, shows concern for others’ welfare, demonstrates a problem-solving approach, etc.

Terms: differentiates, explains, initiates, justifies, proposes, shares, etc.
Organization: Bringing together different values, resolving conflicts among them, and starting to build an internally consistent value system – comparing, relating and synthesizing values and developing a philosophy of life.

Objectives: recognizes the need for balance between freedom and responsibility in a democracy, understands the role of systematic planning in solving problems, accepts responsibility for own behavior, etc.

Terms: Arranges, combines, compares, generalizes, integrates, modifies, organizes, synthesizes, etc.

Characterization by a Value or Value Complex: At this level, the person has held a value system that has controlled his behavior for a sufficiently long time that a characteristic “life style” has been developed. Behavior is pervasive, consistent and predictable. Objectives are concerned with personal, social, and emotional adjustment: displays self reliance in working independently, cooperates in group activities, maintains good health habits, etc.

Psychomotor Domain

Instructional objectives and derived questions/tasks typically have cognitive/affective elements, but the focus is on motor skill development. The suggested areas for use are speech development, reading readiness, handwriting, and physical education. Other areas include manipulative skills required in business training (e.g., keyboarding), industrial technology, and performance areas in science, art and music. American education has tended to emphasize cognitive development at the expense of affective and psychomotor development. The well-rounded and fully functioning person needs development in all three domains. In the psychomotor domain, performance may take the place of questioning strategies. This domain has received less recognition and research than the two previous ones. However, additional information is available for faculty in programs where this may be relevant.

Relevant Publications


III. DEVELOPING OUTCOMES MEASURES

A standard prescription for outcomes assessment is to use multiple measures. It is important to avoid relying on only one measure, such as a test, survey or single course grade, to provide information about a course or program. Certainly, any course or program has multiple objectives. Therefore, relying a single limited measure would result in a misleading picture of what is going on in the classroom or the program. Students may perform poorly on one test or project, but better on another. Student responses on a survey, while informative, take on a much richer meaning when viewed along with test results from those students. Both pieces are enhanced by correlation with student database information. Multiple measures allow exploration of what students know, what they can do with what they know, and what they think about the whole process. Important information can also come from sources other than students. Data from surveys of faculty, alumni, and employers of program graduates can be combined with student input to provide a well-rounded picture of your program. The observations of faculty can also contribute to the understanding of outcomes assessment data, but it is important to note that this “soft” measure should never be relied upon exclusively.

This section will describe and illustrate several outcomes assessment measures and techniques. There is no simple way to categorize the myriad outcomes measures. Certain outcomes measures are directly tied to the learning process, whereas others indirectly allow inference of such learning. Some procedures produce formative evaluations while others are summative. Some procedures are more suitable for assessing outcomes for individual courses, others for evaluating performance of majors or students in a particular program, and still others can be used to appraise general outcomes desired in several courses. There are numerous possibilities for assessing the numerous outcomes that we want for students in our classes, our majors, and at the College in general.

A. Tests and Examinations

Description

In many cases, a test will be one part of a fully developed programmatic 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 as part of their assessment plans to evaluate whether students have acquired certain process- and content-related knowledge. Tests used wholly or in part for outcomes assessment purposes differ in important ways from those used by an instructor in a classroom. For classroom use, instructors will generally develop their own classroom tests, making all decisions about when and how to construct, administer, score, and report the results. Construction may be done informally or without documentation. Within an assessment framework however, planning, implementing, and using results all become group efforts – a shared set of
decisions and responsibilities. Consensus is emphasized. Some additional planning time, communication, and record keeping will be needed.

The most frequent use of tests by instructors is to assign values related to individual student learning goals or objectives. When used for program assessment, test performance is generally used along with other information to describe group achievement.

When using tests for outcomes assessment, there are two primary alternatives: (1) locally developed, faculty generated tests and examinations, and (2) commercially produced standardized tests and examinations.

*Locally Developed Tests*

Locally developed tests and examinations are probably the most widely used method for evaluating student progress. For assessing an academic program, examinations designed by the instructors who set the educational goals and teach the courses is often the best approach. Cost benefits, interpretation advantages, and quick turnaround time all make using locally designed tests an attractive method for assessing student learning.

Tests designed for a specific curriculum often prove more valuable when assessing student achievement than commercial instruments which may be too general. Tests should focus on the mission and goals of the department and/or general education and the course objectives, and permit useful projections of student behavior and learning. A well-constructed and carefully administered test that is graded by two or more judges for the specific purpose of determining program strengths and weaknesses remains one of the most popular instruments for assessing most majors.

For a thorough review of test construction tips and examples visit the Ball State University Assessment Workbook website at www.bsu.edu/IRAA/AA/WB/chapter4.htm

*Commercial Tests*

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 to 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 examinations such as the GRE and MCAT may present faculty with useful information about ways to make programmatic improvements based on national performance trends.
When using commercially generated tests, national standards are used as comparative tools in areas such as rates of acceptance into graduate or professional school, rates of job placement, and overall achievement of students when compared to other institutions. In most cases, standardized testing is useful in demonstrating external validity. However, it must be remembered that the items being evaluated by commercial tests may not align precisely with local goals and objectives.

There are a number of advantages to using commercial/standardized tests and examinations to measure student achievement:
1. Institutional comparisons of student learning are possible.
2. Very little professional time is needed beyond faculty efforts to analyze examinations results and develop appropriate curricular changes that address the findings.
3. In most cases, nationally developed tests are devised by experts in the discipline.
4. Tests are traditionally given to students in large numbers and do not require faculty involvement when exams are taken by students.

As part of their assessment efforts, many institutions and programs already use a multitude of commercially generated examination and tests. Some of the more commonly used national tests are listed below.

CLA (Collegiate Learning Assessment): This is an assessment instrument that measures knowledge and skills acquired by students in general education courses, in a “value-added” model. Administered by the Council for Aid to Education (CAE), New York, NY.

ETS Proficiency Profile (Formerly MAPP, Measure of Academic Proficiency and Progress): Used to evaluate students’ performance on certain general education skills. Published and administered by Educational Testing Services, Princeton, NJ.

CAAP (Collegiate Assessment of Academic Proficiency): Designed to “assess, evaluate and enhance the outcomes” of a general education curriculum. 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. Many discipline-specific examinations are also offered for 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, NJ.

Major Field Achievements Tests: Major field examinations are administered in a variety of disciplines, and are often given to students upon or near completion of their major field of study. They 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, NJ.

Other commercial instruments of some value for assessment of specific programs include professional school admissions tests such as the Medical College Admissions Test (MCAT) and the Law School Admissions Test (LSAT) as well as certification exams, such as those for teachers (LAST) and accountants (e.g., CPA).

**Examples of Tests Used for Assessment / Placement at CSI**

As part of City University’s admissions process, students are required to demonstrate their competence in reading, writing, and mathematics. They can do this by scoring at the required levels on SAT exams, NYS Regents Exams, or CUNY Skills Assessment Tests.

The Reading Skills Test measures reading comprehension as a combination of referring and reasoning skills. Test items require students to derive meaning from several texts by (1) referring to what is explicitly stated and determining the meaning of words through context, and (2) using reasoning to determine implicit meanings, to draw conclusions, and to make comparisons and generalizations. The test subject material consists of three prose passages of about 375 words each, that are representative of the level and kinds of reading commonly encountered in first-year college courses. Each passage is accompanied by a set of eight multiple-choice test items.

The Writing Skills Test measures students’ understanding of the conventions of American English in three major writing skills areas: usage and mechanics (punctuation and grammar); sentence structure; and rhetorical skills (organization, strategy, and style of standard written English). Spelling, vocabulary, and rote recall of grammar are not tested. The test consists of three prose passages, each accompanied by 12-multiple choice test items.

The Writing Sample is a direct assessment of students’ writing skills. Students are presented a choice of two questions, which include information about a decision that must be made by a group of people; this group must decide between two alternatives. The writer is asked to advise the group on the best choice and explain why the group should agree with the writer’s position. In addition, the questions specify the basis upon which the decision must be made. The Writing Sample is scored by two trained readers, using a six-point scale.

The COMPASS Mathematics Assessment Test is designed to measure students’ knowledge of a number of topics in mathematics: arithmetic, elementary algebra, intermediate algebra, trigonometry, and precalculus. Placement into required basic math courses is based on results of arithmetic and elementary algebra sections. The test is adaptive based on student responses, and covers progressively advanced topics. Placement into more advanced mathematics courses is based on the results of the last three parts of the test.
The CUNY Proficiency Examination (CPE) is a required test for all undergraduate CUNY students who have completed 45 or more undergraduate credits. The test must be passed for students to get an undergraduate degree, move into the upper division of a CUNY college, or transfer to a senior CUNY college.

The CPE evaluates students’ competence in aspects of academic literacy that the CUNY faculty considers important for success in upper division studies. The exam was designed to resemble typical college assignments in which writing is produced in response to reading material, data, or observations. The examinations are evaluated by trained external reviewers from a range of disciplines and backgrounds.

The CPE tests some of the skills that students should have developed through the course work that they have taken: reading and interpreting text books and material of general interest; organizing and presenting ideas about what they have read, and connecting those ideas to other information or concepts; writing clearly and effectively for an audience; and interpreting and evaluating material presented in charts and graphs. The CPE consists of two separate tasks. In the first, students are required to write a focused essay, drawing a relationship between specified elements of two reading selections and extending it, as directed, to their own experiences, understanding, or ideas. In the second task, students are given a set of materials (two charts or graphs and a brief reading passage) on the same or similar topics; students must state the main claim of the reading selection and discuss the extent to which the data in the charts support or challenge that claim.

Additional information regarding the CPE can be found at www.cuny.edu/cpe/

Relevant Publications


B. Course-Embedded Assessment

Description

Course-embedded assessment is based on student classroom activities (e.g., assignments, tests, recitals, presentations, projects). Questions intended to assess outcomes goals for the whole program or objectives for the course are incorporated into exams or other assignments. Evaluation of the responses is conducted at the course level (e.g. Question A will be used in the mid-term exam in all sections of HST100 to evaluate the level at which students perform on course objective 1). Since it is already part of the course activities, good effort by students is likely without the burden of extra assessment-specific requirements.

Course-embedded techniques are obviously similar to the classroom assessment techniques just discussed, and the terms are often used interchangeably. Although an embedded component is often part of the evaluation for a specific course, its use for outcomes assessment is separate from that used by the course instructor to grade the exam, report, or term paper.

Advantages

There are a number of advantages to using course-embedded assessment.

1. Student information gathered from embedded assessment draws on their accumulated educational experiences and familiarity with specific areas or disciplines.
2. Embedded assessment often does not require additional time for data collection, since instruments used to produce student learning information can be derived from assignments already planned as part of course requirements.
3. The presentation of feedback to faculty and students can occur very quickly, creating an environment conducive to ongoing programmatic improvement.
4. Course-embedded assessment is part of the curricular structure, and students have a tendency to respond seriously to this method.
Techniques

The specific techniques of course-embedded assessment depend on the objective being assessed and the nature of the course in which the activity is embedded. Many of the procedures described for classroom assessment are useful for measuring more general goals as well. Some possibilities are listed below. In all cases the actual items being evaluated are embedded as part of the course and are transparent to the students.

- Pre/Post Testing: This procedure measures the designated student learning outcome at the beginning of the course and again at the end. This allows determination of the "value added" by the course or a course component.
- Common Exam Question: This procedure is commonly used to evaluate performance across multiple sections of the same course; for example, evaluating several different courses with direct relevance to a particular general education goal (e.g. writing or critical thinking). Faculty involved in the specific program or with the specific goal evaluate the student responses in order to determine whether those outcomes are being demonstrated.
- Rubrics: Rubrics are often identified with specific classroom objectives. However, they are also used to evaluate general education or program goals as well. In the latter case, at least two faculty members evaluate student assignments on pre-established outcomes variables using a well-defined set of criteria. The scoring of the written portion of the CUNY CPE exam is an example of such a process.

Examples of Course-Embedded Assessment at CSI

During Fall 2001 and Spring 2002, faculty teaching COR 100 (United States: Issues, Ideas, and Institutions) developed a course-embedded assessment technique to evaluate the effectiveness of students’ learning in this course. The plan focused on the ‘value-added’ approach to assessment. Namely, students were asked to write three essays and define 15 key concepts at the beginning and the end of the course. The test items were selected by the faculty as important for students to know by the end of the course. The pre/post testing enabled the collection of data to inform the faculty about students’ development during the course. Faculty were free to decide whether they wanted to include students’ responses into the course grades. The responses, essays and identifications were rated on a three-point scale (i.e., a rubric): inadequate, adequate, and superior. Two readers reading ‘blindly’ evaluated each response; that is, neither reader knew how the other scored each student paper. An important point to note is that the results could also be analyzed for inter-rater reliability, an important aspect of this kind of work.
Relevant Publications


C. Performance-Based Assessment

Description

A performance-based measure is one that uses student activities to assess a student’s knowledge and skills. Types of performance-based measures include portfolios, performance measures, assessment center methods, and unobtrusive measures (Shaffer, 1992).

Examples

- Students’ artwork is displayed and judged by the faculty.
- Students’ photographs are displayed and judged by the faculty.
- Students’ writing skills are assessed and samples of students’ writing (Shaffer, 1992).
- Assessment Center Method, a simulation of real-life situations in which student performance is evaluated by expert judges. For example, students might be asked to prepare a business plan and present it to a panel of faculty members as if they were prospective clients, or students could be assigned roles in a fictitious situation particular to the area of study (e.g. to assess a social work course, the students could be asked to assume the roles of client and social worker).
- Foreign language majors are rated in terms of their abilities to converse on a variety of topics.
- Nursing majors are evaluated on their performance of a variety of medical procedures.
- Students are evaluated on their ability to synthesize a chemical compound in the lab.
Advantages

Performance measures can tap areas of student abilities that are not accessible through conventional tests. They are particularly important when one purpose of the instruction is to teach certain skills. Such measures:

- provide direct evidence of performance skills
- show the natural progression in student learning
- provide multiple data points of an individual student’s performance
- help students to take greater responsibility for their own learning
- create a culture of self-examination

For performance measures to be effective, the criteria for assessing quality of performance and/or the rating procedures must be well thought out. This requires emphasis on objectivity, and concern for reliability and validity. As with other assessment measures, students need to be motivated to perform their best. Performance evaluations demand additional time from faculty. Both faculty and students may require training for successful implementation of performance-based assessment (Forrest, 1990).

Relevant Publications


D. Portfolio Assessment

Description

Portfolios are one possible type of performance-based assessment. They have a long history in the arts, but there is a current trend toward the use of portfolios in the assessment of a wide variety of student outcomes. For assessment purposes, portfolios 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. Portfolios can provide information about students’ skills, knowledge, development, quality of writing, and critical thinking.
Typically, the faculty determine what information on 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 may include research papers, multiple choice or essay examinations, personal essays, journals, computational exercises and problems, case studies, audio or video material, computer-based works such as websites or animations, and short-answer quizzes. This information may be gathered from in-class or as out-of-class assignments. An increasingly important mode of presentation for these types of collections of student work is the development of Web-based portfolios.

Evaluation of a well-developed portfolio allows faculty to analyze an entire scope of student work in a timely fashion. Collecting student work over time gives departments a unique opportunity to assess a students’ progression in meeting a variety of learning goals.

Some Uses of Portfolio Assessment

- A department could keep portfolios on a sample of students in a General Studies course. Faculty members could then rate the portfolios according to the goals of the program and objectives of the course.
- Students could be asked to submit a portfolio of their work as an admission requirement to a program. They would then be asked to maintain their portfolios as they progress through the major, adding selected materials the courses that they take. The portfolios would allow the department to chart the progress of their majors.
- To assess writing skills in the major, a department could choose to keep samples of student writing from all the courses in the major. These can be used not only to evaluate students’ progress towards mastery of desired program goals, but can be useful in determining (for example) whether students are getting ample opportunity to write, what types of writing assignments are being required, or if there is one particular course in the program that seems to have a significant impact on the writing skills of the majors.

Relevant Publications


**E. Capstone Experiences**

*Description*

Capstone experiences are courses or projects which attempt to integrate knowledge, concepts, and skills associated with an entire sequence of study in a program. Generally, capstone experiences are specially designed seminars for seniors majoring in a particular discipline. Capstone courses integrate the specialized knowledge, theories, research methods, and technical skills that students have been taught over the course of study in the major. At some institutions, however, a capstone course may also occur part-way through a student’s undergraduate career to provide an opportunity for students to integrate their General Education courses into one encompassing class.

In majors, a capstone experience may take the form of a senior research project evaluated by several readers, or senior majors might be required to develop a portfolio of materials from different courses and summarize the themes and experiences from each course in their major. In the capstone experience, students are often required to give an oral presentation of their project before a panel of faculty reviewers. For academic units where a single capstone course is not feasible or desirable, a department may designate a small group of courses where the competencies of majors will be evaluated.

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 student in the discipline.

*Relevant Publications*
F. Surveys and Interviews

Description

Student surveying and exit interviews have become increasingly important tools for understanding the educational needs of students. When combined with other assessment instruments, they have been used successfully to produce important curricular and co-curricular information about student learning and educational experiences. Surveys typically sample a representative group of students using a set of standard questions. Interviews are used to ask individual students about their experiences and attitudes toward some aspects of their college experience. A survey can be locally constructed or purchased. Questions may be open-ended or closed ended. The instrument can be designed for specific groups such as students in a particular course, or alumni of the program. Surveys may be very brief or several pages long; they can be given in class, mailed on paper or collected online. Some surveys are summative (carried out at the end of a program, perhaps to satisfy demands for student information required by various agencies) whereas others are formative (gathered during a program, to provide information directly relevant to program improvement). Among the latter, the most common variants are discussed below.

Surveys of Current Students

Surveys of current students are often a useful way to assess perceptions of the academic and social climate of a department or program. This may have direct bearing on whether program goals and objectives are being met (Stout & Pickerill, 1992). Exit interviews of students leaving a program and of graduating seniors can provide valuable information about the strengths and weaknesses of a program. There are numerous commercially available student surveys as well as services, which help in the development of local surveys. Depending on the scope, it is possible for program faculty to develop a survey to assess outcomes they specify.
Alumni Surveys

Surveying of alumni is a useful assessment tool for generating data about how an academic experience prepared students for professional work, their satisfaction with a program and their perceptions of curriculum relevancy. As an assessment supplement, alumni surveying provides departments with a variety of information that can highlight program areas that may need expansion or enhancement. Alumni surveying is also a way to gather data and maintain or reestablish relationships with individuals who may want to help the program continually improve.

Employer Surveys

Employer surveys can provide information about the curriculum, programs, and students that other forms of assessment cannot produce. Through surveys, departments traditionally seek to determine 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 of 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. Banta (1993) points out several methodological problems with employer surveys. First, the law requires institutions to obtain a graduate's permission before contacting that individual's employer. Generally, fewer than half of the students contacted in alumni surveys grant permission to contact. The relatively low permission rate raises questions about whether students who give permission differ in significant ways from those who refuse.

Survey Limitations

As noted above, the biggest problem with surveys, in general, is that of poor response rates. This raises doubts about the broader application of the results. Other technical issues relate to the clarity and focus of the question items and the nature of the scoring process. Fortunately, there are several helpful guides to developing satisfactory survey instruments.

Of equal concern is the effect of “survey fatigue,” where students' responses become unreliable and response rates decrease as a result of over-surveying. Students do not operate only within the confines of one major or program, and many agencies may wish to evaluate their effectiveness by surveying the students with whom they interact. Because of this effect, it is important to be aware that the results of one survey may be influenced by a survey from a different source, even if the two instruments are not attempting to evaluate similar topics.
Relevant Publications


G. Focus Groups

Description

Focus groups are moderated discussions involving a specifically selected group. The moderator supplies the topics and monitors the discussion. The purpose is to gather information about a specific or focused topic in a group environment, allowing for discussion and interaction by the participants. The interactions between the moderator and participants allow the moderator to probe issues in-depth, address new issues as they arise, and ask participants to build on their responses. Although focus groups require careful planning, they can be relatively low cost and provide quick results.
Uses and Misuses

Focus groups are “fundamentally a way of listening to people and learning from them.” (Morgan, 1998, p. 9). They can be used:
- to examine attitudes or opinions
- to explore why opinions are held
- to identify the strengths and weaknesses of programs
- to interpret results from other assessment projects
- to provide information for designing surveys

Focus groups should not be used:
- for assessment that requires statistical projections or statistically representative data. Focus groups are not an effective method for measuring frequencies or counts, nor will focus groups tell you how people will behave (Palomba & Banta, 1999; Morgan, 1998).
- in situations where participants are not comfortable with each other. For example, faculty may not be comfortable discussing program weaknesses with students.
- in situations where focus groups may “imply commitments you cannot keep” (Morgan, 1998, p. 60).
- in situations that are emotionally charged, especially if additional information may exacerbate the difficulties (Krueger, 1994).

Relevant Publications


H. Curriculum Mapping and Syllabus Analysis

Description

Certainly not every major course needs to address all of the defined objectives for the major. Curriculum mapping provides a means to chart just which courses address which goals of the program. The analysis 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 encounter those goals.

One ready instrument for examining course requirements, faculty expectations and communication with students is the course syllabus. Syllabus analysis can help assess the likelihood of student learning, by evaluating the clarity of communication of course objectives, and possibly how attainment of these is measured. It is an especially useful technique when multiple sections of a department course are offered by a variety of instructors. Syllabus analysis provides assurance that each section covers essential points without prescribing the specific teaching methods to be used in helping the students achieve those objectives.

Relevant Publications

I. Classroom Assessment Techniques

Description

Classroom Assessment Techniques (CATs) are variety of techniques used by instructors to obtain ungraded, anonymous feedback from students. The feedback is used to assess students’ understanding of what instructors are teaching, to identify students’ misconceptions, and to clarify material and instruction that is confusing. The CATs, originally developed by Angelo and Cross (1993), are integrated into the ongoing academic experience (for example, a lecture) and designed to take little time from the instructor’s schedule to help assess how well the desired objectives are being met. Many of these techniques do not require much work and preparation by the teaching faculty, especially when considered in relation to their yield.

Examples

Some popular examples of CATs are listed below. Others are described in Angelo and Cross’s text.

- The Minute Paper: This assignment gives students one minute to respond anonymously, in writing, to questions such as “What was the most important thing you learned during this class?” and “What important question about today’s topic remains unanswered for you?” This exercise asks not only for a passive recall but also a reflection and an evaluation of the material just heard. The results obtained can be easily categorized into informative findings that could be used to re-visit some issues not properly conveyed to the students.

- The Muddiest Point: This is a variation of the minute paper and essentially is the response to the question “What did you understand the least?” or “What was the muddiest (most unclear) point in this presentation?”

- Categorizing Grids: These graphic productions are helpful in many disciplines, especially at an introductory level, where a first step to real problem solving is learning how a variety of conceptual taxonomies work. In other words, describing where students need to learn the rules for what goes with what.

- Documented Problems: These assessment activities are a natural extension of the common request to “show your work.” By asking students to show both their work and show the reasoning behind their work, instructors can get extremely valuable and detailed information about any conceptual difficulties or lingering misconceptions students may have, as well as an overview of the basic strategies they are using to solve problems.

- Self-Diagnostic Learning Log: This exercise asks students to analyze their own learning process by answering questions such as: Which concept or principle that you've learned
in this course was most useful to you in working these problems? Which concept that you have previously learned did this new concept or principle build on? If you experienced difficulty or were unable to work any of the problems, what information or knowledge would have enhanced your ability to work the problem(s)?

Relevant Publications

IV. DEVELOPING A DEPARTMENT / PROGRAM ASSESSMENT PLAN

A. STEPS IN DEVISING A DEPARTMENT / PROGRAM ASSESSMENT PLAN

The following is adapted from the University of Wisconsin-Madison’s guide to developing a departmental assessment plan, available at www.provost.wisc.edu/assessment/manual

Developing a program-specific plan to formalize assessment objectives can be a relatively simple process. The following six-step approach has enabled many academic units to develop effective plans for assessing student learning in the major.

1. Define the Educational Mission and Goals of the Major / Program
   A department or program’s mission and the instructional goals that flow from it serve as the foundation for assessment planning. Program assessment is intended to provide information on how well students are performing relative to the educational goals established by the department or program. The defined goals should be far-reaching and describe a variety of skills and knowledge-based areas, and assessment plans should be devised to assist faculty in determining whether students are achieving them. Clearly, goals for the major must ultimately be integrated with those of the school/college, which in turn, must be aligned with the institutional mission statement.

2. Describe Methods For Assessing Student Achievement at Important Stages in the Program
   Once educational goals have been identified, assessment methods can be chosen. These methods should be consistent with the programmatic goals defined in the first step. Comprehensive assessment strategies frequently require the use of more than one assessment instrument to evaluate program effectiveness.

3. Determine How Results Will Be Disseminated and Used For Program Improvement
   Assessment results and information should be used in a timely fashion to facilitate continuous programmatic improvements. Designing a feedback process is essential in all assessment plans, because it gives faculty the opportunity to use recent findings to implement appropriate curricular changes. When results indicate that students are performing at levels consistent with established objectives, faculty may choose to focus assessment initiatives in other areas or extend assessment practices to areas not currently under scrutiny.

4. Develop a Timetable For Selecting, Implementing, and Using the Results of Assessment
   In order to incorporate assessment into ongoing curricular planning, departments should devise an appropriate timetable for the development and execution of assessment programs. The timetable should indicate when departments will meet foreseeable developing each of the previous three assessment planning steps.

5. Submit Assessment Plans to Academic Outcomes Assessment Committee and OIRA
   The Academic Outcomes Assessment Committee serves as an advisory body to assist departments and programs with the development and implementation of their assessment plans. Discussion by the AOAC and the archiving of plans and assessment
materials in the OIRA helps demonstrate that assessment is embedded in the campus culture.

6. Implement Assessment Plans and Revise as Needed
When feedback from assessment practices becomes available, departments should use the results for programmatic improvement or to revise objectives or plans, if necessary.

By following this six step process, the complexities associated with developing effective and efficient assessment plans, especially for those devising assessment strategies for the first time, can be made less arduous and time consuming. As departments implement their assessment strategies, they will learn from their successes and failures as they attempt to discover useful methods of measuring student achievement.

**B. RELATIONSHIP BETWEEN ASSESSMENT AND PROGRAM REVIEW**

Mandated periodic program reviews typically demand thorough self-study. This process often includes several components which relate to outcomes assessment (e.g. defining goals and evaluations of program performance). However, there are significant differences between the two endeavors.
Program review is required by the university; documentation is sent to university administrators. It is rightly or wrongly perceived by many faculty as a burden with potentially negative consequences. By contrast, a program’s academic outcomes assessment plan should come from the faculty’s inherent interest in assuring that students are accomplishing all that is hoped for. The faculty decide what to assess and how to do so, and also determine the use and dissemination of outcomes data. Granted, many outcomes assessment initiatives do evolve from program reviews, as well as the demands of other agencies (e.g. accrediting bodies).

Program review is periodic, whereas outcomes assessment must be ongoing and continuous. Currently programs at CSI are reviewed at least every 10 years. However, program improvement is a constant goal, not bound to any arbitrary schedule. This does not mean that every assessment activity must be performed in every course in every semester, but it does mean that programs should be continually evaluating whether they are accomplishing their various goals. Institutions which have developed a reputation for success in outcomes assessment have cultivated a “culture of assessment” which permeates all academic activities.
PART 3. ASSESSMENT RESOURCES

I. GLOSSARY OF ASSESSMENT TERMS

Adapted in 2002 from several web sources, especially:
- California State University - Sacramento
- New Horizons for Learning

Accountability
The responsibility to governing bodies and constituents (the public) for resources used and goods/services produced.

Alternative Assessment
Many educators prefer the description “assessment alternatives” to describe alternatives to traditional, standardized, norm- or criterion-referenced traditional paper and pencil testing. An alternative assessment might require students to answer an open-ended question, work out a solution to a problem, perform a demonstration of a skill, or in some way produce work rather than select an answer from choices on a sheet of paper. Portfolios and instructor observation of students are also alternative forms of assessment.

Assessment
“Assessment is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public; setting appropriate criteria and standards for learning quality; systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards; and using the resulting information to document, explain, and improve performance.” (Tom Angelo, 1995).

Assessment is the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development.” (Palomba & Banta, 1999).

Assessment Plan
The original written assessment document of the purpose, mission, goals, and objectives of the institution, the outcomes to be assessed, and the assessment strategy.

Authentic Assessment
A characteristic of assessments that have a high degree of similarity to tasks performed in the real world. The more authentic the assessment, the less inference required to predict student success after graduation.

Analytic Scoring
Evaluating student work across multiple dimensions of performance rather than from an overall impression (holistic scoring). In analytic scoring, individual scores for each dimension are scored and reported. For example, analytic scoring of a history essay might include scores of the following dimensions: use of prior knowledge, application of principles, use of original source material to support a point of view, and composition. An overall impression of quality may be included in analytic scoring.

Capstone Assessment
Assessment of outcomes structured into learning experiences occurring at the end of a program. The experiences involve demonstration of a comprehensive range of program outcomes through some type of product or performance. The outcomes may be those of the major and of the general education program or of the major only. (Palomba & Banta, 1999).
Classroom Assessment
An assessment developed, administered, and scored by a teacher or set of teachers with the purpose of evaluating individual or classroom student performance on a topic. Ideally, the results of a classroom assessment are used to inform and influence instruction that helps students reach high standards.

Cohort
A group whose progress is followed by means of measurements at different points in time.

Course-embedded assessment
Assessment that occurs simultaneously with learning such as projects, portfolios and “exhibitions.” Occurs in the classroom setting, and, if properly designed, students should not be able to tell whether they are being taught or assessed. Tasks or tests are developed from the curriculum or instructional materials.

Criteria/Standards
Performance descriptors that indicate how well students will meet expectations of what they should be able to think, know or do. They are descriptive benchmarks against which performance is judged. These criteria or standards may be described in varying gradients of success as in rubrics or in grades. Often they are stated in terms of percentages, percentiles, or other quantitative measures (Nichols, 2000).

Criterion Referenced Tests
A test in which the results can be used to determine a student's progress toward mastery of a content area. Performance is compared to an expected level of mastery in a content area rather than to other students' scores. Such tests usually include questions based on what the student was taught and are designed to evaluate the student's mastery of designated objectives of an instructional program. The “criterion” is the standard of performance established as the passing score for the test. Scores have meaning in terms of what the student knows or can do, rather than how the test-taker compares to a reference or norm group.

Direct Assessment Methods
These methods involve students' displays of knowledge and skills (e.g. test results, written assignments, presentations, classroom assignments) resulting from learning experiences in the class/program. (Palomba & Banta, 1999).

Evaluation
Decisions made about assessment findings; deciding about the value of programs/program outcomes; may involve recommendations for changes.

Formative Assessment
Assessment conducted during a performance/course/program with the purpose of providing feedback that can be used to modify, shape, and improve a performance/course/program. (Palomba & Banta, 1999).

Goals
Description of the intended results of a learning program, stated in global, general terms, e.g. clear communication, problem solving.

Grading
Values placed on varying levels of achievement in course assignments and/or examinations. Course assignments and tests can be used for assessment if they are clearly linked to course/program goals and if the assessment is based on established criteria and standards.
Holistic Scoring
A type of grading in which an assignment is given an overall score. Possible scores are described in a rating scale. A high score indicates achievement of all aspects of the assignment, while a low score means few if any of the desired outcomes have been achieved. The score levels need to be specific enough to reveal meaningful, diagnostic information when the scores are aggregated. (Ewell, 1991; Palomba & Banta, 1999).

Indirect Assessment Methods
Assessment methods that involve perceptions of learning rather than actual demonstrations of outcome achievement (e.g. alumni surveys, employer surveys, exit interviews).

Objectives
Statements that describe the expectations of what students should be able to think, know or do when they have completed a given educational unit (usually a course). Each statement should describe one expectation; several should not be bundled into one statement. The statements must be clear and easily understood by both students and faculty in the area or department.

Outcomes
The units by which the success of course objectives may be evaluated. Objectives and outcomes should be closely aligned; they are therefore usually developed concurrently.

Performance-Based Assessments
Assessments requiring reasoning about recurring issues, problems and concepts that apply in both academic and practical situations. Students actively engage in generating complex responses requiring integration of knowledge and strategies, not just use of isolated facts and skills.

Portfolio Assessment
A type of direct measure, a performance measure, in which students' assignments are carefully reviewed for evidence of desired learning outcomes. The portfolios contain work selected over a period of time, with materials added as the student progresses through the course/program. In addition, the portfolios usually include students' reflective learning/outcome analysis statements. (Lyons, 1998).

Primary Trait Analysis
Factors or traits (assignment specific) that are considered in scoring an assignment generally stated in a hierarchical scale of three to five incremental levels of achievement quality. For each level on the scale there is a specific statement that describes expected behavior (criterion) at that level. (Palomba & Banta, 1999; Walvoord & Anderson, 1998).

Reliability
Consistency or stability of assessment results over time. Of particular importance for performance or outcomes assessment is inter-rater reliability. This is an estimation of the consistency of the ratings assigned by two or more raters, and can demonstrate that they agree on the criteria used to evaluate performance.

Rubric
In general a rubric is a scoring guide used in subjective assessments. A rubric implies that a rule defining the criteria of an assessment system is followed in evaluation. A rubric can be an explicit description of performance characteristics corresponding to a point on a rating scale. A scoring rubric makes explicit expected qualities of performance on a rating scale or the definition of a single scoring point on a scale.
Self-Assessment
Students reflect about their own abilities and performance, related to specified content and skills and related to their effectiveness as learners, using specific performance criteria, assessment standards, and personal goal setting. The intent is to teach students to monitor their own learning continuously.

Scoring Guide/Rubric
A kind of holistic or primary trait scoring in which detailed criteria are delineated and used to discriminate among levels of achievement in assignments, performances, or products.

Standardized, Norm-Referenced Test
A form of assessment in which a student is compared to other students. Results have been normed against a specific population (usual nationally). Standardization (uniformity) is obtained by administering the test to a given population under controlled conditions and then calculating means, standard deviations, standardized scores, and percentiles. Equivalent scores are then produced for comparisons of an individual score to the norm group’s performance.

Summative Assessment/Evaluation
Assessment conducted after a program has been implemented and completed to make judgments about its quality or worth compared to previously defined standards. (Palomba & Banta, 1999).

Validity
The extent to which an assessment method produces accurate, meaningful, and useful measures of the skills and knowledge it was designed to assess.
II. Assessment Bibliography

General web sources on outcomes assessment used in the development of this manual in 2002 came from:
- University of Massachusetts Amherst
- St. Cloud State University
- Texas A&M University
- Ball State University
- University of Wisconsin - Madison


