

# **Outcomes Assessment Guidelines and Resources for Departments and Schools**

**University of Missouri—Kansas City**  
University Assessment Committee

**Last Revised: April 26, 2007**

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## I. Introduction

UMKC's assessment plan was updated in April 2006 by the Assessment Task Force (ATF), created by Interim Provost Bruce Bubacz the previous October. The work of the ATF was guided "by assessment and evaluation standards from the North Central Association's Higher Learning Commission [NCA], a variety of professional organizations, and a review of assessment practices at colleges and universities with reputations for effective assessment." In the more than 10 years since UMKC last updated its assessment plan, outcomes assessment requirements and methodologies in higher education have

evolved considerably. An emerging consensus (reflected in the work of assessment theorists and practitioners, and in the standards of regional accrediting organizations) suggests that colleges and universities should be actively engaged in assessing learning at all levels of the institution, focusing on graduate as well as undergraduate education, on the classroom and course as well as the program and degree. And while interpretation of nationally normed tests and institutional data remains a common assessment practice in higher education, many colleges and universities have reduced their dependence on these techniques in favor of a comprehensive scrutiny of work students actually do in classes.

One of the key recommendations of the 1999 NCA accreditation site visit was that UMKC “should articulate an institutional policy statement on assessment, including definitions of assessment and student outcomes assessment, an overall philosophy of assessment, and *expectations of departments, schools, colleges, and the University.*” The evaluation team also recommended that “regular assessment reports and data should be reported *at the department or unit level when possible*” (emphasis added). The present document serves to delineate those expectations, to indicate how assessment is defined at UMKC and what its guiding principles for doing assessment are, and to serve as a resource guide for best outcomes assessment practices.

## II. Assessment at UMKC: Definition and Principles

In its April 2006 report, the Assessment Task Force defined the purpose and philosophy of assessment at UMKC as follows:

*The primary purpose of assessment is to create an environment that promotes educational excellence through evidence-based dialogue about academic programs and services. Successful assessment accomplishes this by:*

- *encouraging us to think deeply about the outcomes we desire for our students and the methods by which those outcomes might be encouraged;*
- *giving us reliable data upon which to measure whether our students are achieving those outcomes or whether our methods are contributing to or detracting from that achievement; and*
- *stimulating us to achieve and maintain high quality teaching and learning*

*Secondarily, assessment also enables us to communicate the effectiveness of our efforts to a variety of stakeholders and to use resources more wisely in carrying out the mission and goals of the University. Assessment facilitates these functions by:*

- *providing a basis for communicating our achievements to our constituents in an objective and accountable fashion; and*
- *providing a basis for making resource allocation decisions.*

*We recognize that there is some tension between the primary and secondary purposes. Through our assessment design and practices, we work to make room for genuine assessment, not merely advocacy or advertisement.*

Its working definition of assessment (taken from Thomas Angelo’s November 1995 *AAHE Bulletin* article, cited in the Appendix) emphasizes the first of these two purposes: “Assessment is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public, setting appropriate criteria and high 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.”

Before describing some of the approaches through which departments are expected to undertake their outcomes assessment work, we’ll try to answer some frequently asked questions about assessment.

## III. Assessment FAQs

### What Is Outcomes Assessment?

Outcomes assessment is any systematic inquiry whose goal is to document learning and to improve the teaching/learning process. It can be understood more precisely as a three-step process of

1. Defining what students should be able to do, think, or know at the end of a unit of instruction (defining, that is, the *student learning outcomes*).
2. Determining whether, and to what extent, students can do, think, or know it.
3. Using this information to make improvements in teaching and learning.

If this sounds partly recognizable, that's because all good teachers instinctively do outcomes assessment all the time. Whenever teachers give a test or assign an essay, look at the responses to see where students have done well or not so well, and reconsider their approach to teaching in light of that information, they're doing a form of assessment. Outcomes assessment simply makes that process more systematic.

The ATF and the UMKC assessment committee have struggled with the slipperiness of this concept, often pausing in their work to remind themselves of what “assessment” does and does not mean. Faculty frequently mistake it for something it is not. Though it over-simplifies a bit, we suggest that you ask yourselves these questions to be sure that you are actually engaged in outcomes assessment:

- Are you demonstrating, in more tangible ways than simply pointing to grading patterns and institutional data, that learning is taking place in your discipline? If you are, you are doing outcomes assessment. *You are documenting student learning.*

- Are you identifying, with some precision, areas in your department where learning is deficient, and working actively to improve learning? If so, you are doing outcomes assessment. *You are trying to enhance and improve student learning in light of evidence you've collected about it.*

## Who Should Do Assessment?

Until fairly recently, outcomes assessment data were mostly gathered by institutional research offices, focusing on key performance indicators like retention, success, persistence, and transfer rates. Results of national student engagement surveys or nationally normed tests of core competencies like writing ability and critical thinking have also been compiled for years and used primarily for accountability purposes. Increasingly, however, the locus of outcomes assessment work has shifted from the institution as a whole (though that is still important) to the various departments and professional schools which the institution comprises. Assessment is the business of each program and school on campus—and by extension, each instructor. Comprehensive assessment plans need to be developed and implemented for graduate and professional degree programs, not simply undergraduate majors. Institution-level outcomes and data germane to those outcomes will still be important, but assessment of program-, course- and even classroom-level outcomes is also increasingly vital. Unless faculty themselves become actively involved in defining and assessing the outcomes they are most directly responsible for, the kinds of improvement assessment can lead to cannot take place.

## Isn't Assessment the Same Thing As Grading?

No—at least not as grading students on papers and exams, and in courses overall, is usually done. Grading and assessing usually have distinctly different purposes. Traditional grading is primarily evaluative, a method for classifying students. Outcomes assessment is primarily ameliorative, designed to improve teaching and learning. The emphasis in outcomes assessment always falls on Step 3: using information about student learning patterns in order to improve. This is sometimes referred to as “closing the feedback loop”—something that must always be our ultimate aim in doing this kind of assessment. Grades typically reflect an aggregate of competencies achieved (or not achieved) by a student on an assignment or for a class. Knowing that a particular student got a “B” in a course, or even knowing that 20% of the students in a class got an “A” and 30% got a “B,” won't tell us very much about how well students in general did in achieving particular learning outcomes in the course. Disaggregating those grades using outcomes assessment techniques, however, may reveal that 85% of the students demonstrated competency in a critical thinking outcome, while only 65% demonstrated competency in a written communication outcome. That may lead us to investigate ways of teaching students to write more effectively in the course—

resulting ultimately in improved learning.

Grades are also often based on a number of factors (e.g., attendance, participation or effort in class, completion of “extra credit” assignments) that may be unrelated to achievement of learning outcomes for the course. That may be why the GPAs of high school and college students have risen sharply over the last 15 years, while the performance of these same students on standardized tests to measure writing, reading, and critical thinking has markedly declined.

Outcomes assessment methodologies may actually help us grade our students more accurately, and give students more useful feedback in time for them to improve the work they do in the course later on. But simply pointing to grading patterns in classes and courses is not a form of outcomes assessment.

## Why Should We Do Assessment?

The best reason for systematically assessing student learning is the intrinsic value of doing so. Effective teaching doesn't exist in the absence of student learning. Assessment is part of the broad shift in higher education today toward focusing on student learning, on developing better ways of measuring and improving it. Assessment results implicitly ask us to fit our teaching, as much as we can, not to some set of timeless pedagogical absolutes but to the messy reality of specific classrooms, where actual students in one section of a class may require a substantially different kind of teaching than their counterparts in another. Done well, outcomes assessment makes us happier teachers because it makes us better teachers. And it makes us better teachers because it makes our students better learners. *The primary purpose for doing assessment is to improve student learning.*

Consider the following examples of this process in action:

- At the University of Colorado, Classics faculty conducted formative assessment that led them to add more sight-reading exercises in introductory Latin and Greek courses. As a result, they noticed dramatic improvement in the translation skills of their students. Assessment projects undertaken by Theater and Dance, Chemistry/Biochemistry, and English faculty have also led to demonstrable improvement in student performance. ([http://www.colorado.edu/pba/outcomes/aoc/h010322\\_02.htm](http://www.colorado.edu/pba/outcomes/aoc/h010322_02.htm))
- At Iowa State University, faculty in the department of Industrial and Manufacturing Systems Engineering discovered, through their comprehensive assessment processes, that students in the program were not achieving competency in a “global enterprise” learning outcome to the same degree students had done in earlier years. The faculty instituted a collaborative, Internet-based project for students that required them to work with students at University of Strathclyde in Scotland, National Taiwan University of Science and Technology, and Monterrey Institute of Technology in Mexico. As a result, the faculty observe “that the average survey scores of recent semesters and years are better than the average survey scores of earlier semesters” and that the “average scores of the rubric grading” are also increasing. (<http://www.imse.iastate.edu/academics/accreditation/bs-in-ie-program-outcomes/overview.html>)
- At Portland State University, a faculty member in ESL/Bilingual Education describes the value of assessment this way: “I frankly could not make heads nor tails out of this assessment work when it was first presented to me in a faculty seminar several years ago. But with expert advice and mentoring . . . , the ESL/Bilingual Education faculty has created an assessment system that is transparent to our faculty and students, manageable for our program staff, and, most importantly, meaningful in terms of gathering data that we can effectively use to improve our program of study. We have seen both improvement in student competency and increased engagement of the program faculty toward ensuring that students gain competencies in clear and measurable ways. In this most recent (our second) round of assessment work, an Excel-based tool [was constructed] for analyzing our quantitative data that was remarkably efficient and effective for our staff and faculty to work with. Plus, we were finally able to gather faculty in dialog on assessment, with both aggregated statistics from students’ practicum (work samples) and several sample student work samples on the table. The exchange was electrifying. The program faculty and staff left with renewed energy and enthusiasm for our work in preparing ESL/Bilingual educators. Assessment of student learning for program improvement is really transformational. We went into this process convinced that we were doing good work in preparing ESL/

Bilingual educators and after two full rounds of assessment work we are even more committed and enthusiastic about our work as educators—because now we are learning what we do well and how we can learn to do it even better.” ([http://www.pdx.edu/cae/assessment\\_practices.html](http://www.pdx.edu/cae/assessment_practices.html))

Faculty might best think of assessment as a natural extension of their own training and temperament as researchers. *Student learning* (in anthropology, or electrical engineering, or art history, etc.) becomes an additional, yet complementary, site for academic research, with new opportunities for scholarly writing, conference presentations, or “just” cognition. And arguably, students benefit from this research in even more direct and dramatic ways than they do from our traditional forms of scholarship.

## Why Must We Do Assessment?

There are, of course, other reasons for doing assessment. Colleges throughout the country are required by regional accrediting bodies to document and assess student learning. Other governmental agencies charged with funding education see assessment as a way of enabling colleges to demonstrate that learning is taking place in their classes and programs. The state of Missouri has a 20-year history of what its CBHE calls “using evidence-based information as a foundation for high-stakes and continuous-improvement decisions to positively impact teaching and learning.” The CBHE has recently renewed its emphasis on an “accountability framework” for the state’s system of higher education. Colleges can also use assessment data for research and planning purposes, including budget allocation decisions. And students (along with parents, employers, etc.) increasingly ask for evidence of what kind of learning a particular course, program, or degree results in to help in their legitimate decision-making processes. These largely external pressures to document and assess student learning worry some instructors, who may view all accountability measures as potentially intrusive, leading to the loss of academic freedom (more on that later) and even to the imposition of a corporate culture upon American higher education. But it may reassure us to learn that the assessment movement is now 30 years old, that its basic methodologies were developed and refined at some of the nation’s best colleges and universities, that professors—not bureaucrats—led this process, and that assessment is being practiced at colleges and universities all over the world today.

A major recent stimulus to do outcomes assessment at the institutional, program, and course levels comes from UMKC’s accrediting body, the North Central Association’s Higher Learning Commission. NCA asks universities to assess student learning at all levels of the institution (Criterion Three, Core Component 3A states that “Assessment of student learning provides evidence at multiple levels: course, program, and institutional”), and use this information to improve teaching and learning. Visiting accreditation teams will want to see evidence at UMKC that departments and schools not only have a systematic plan for assessing student learning in their courses but actually use that plan.

Outcomes assessment, then, serves at least three critical purposes: to provide clear evidence of learning that is already taking place, to improve learning in areas where it is deficient, and to help with planning and resource allocation decisions.

## Doesn’t Assessment Wrongly Presuppose That Instructors Are Entirely Responsible for Student Learning?

Of course other factors besides the effectiveness of teachers enter into the teaching-learning process—most notably, the level of preparation and motivation of students themselves. No one seriously suggests that if students aren’t learning, or aren’t learning as much or as well as we’d like them to, the instructor is entirely responsible. Students have a role to play, as do administrators, governments (ranging from the local to the national), family members—even the culture as a whole. Outcomes assessment focuses on those aspects of learning that the instructor (and, to an extent, the college administration) can and does influence. It asks of us that we do our best to *clarify* our teaching goals, *determine* which goals students are having difficulty achieving, and do all we can within our power to *enhance* that achievement. But it recognizes that there are aspects out of our control.

## Isn’t Assessment Really a Method to Evaluate Individual Instructors?

The assessment committee has agreed that assessment is not to be used for evaluating individual instructors. We want faculty to want to participate in assessment efforts (it’s not going to work otherwise). Having a system that could be used against

faculty defeats its primary purpose. When you develop assessment processes in your department or school, we hope you will encourage individual instructors to use results for reflective self-evaluation. But barriers should be created to prevent any possible avenue for the evaluation of individual teachers. We can suggest methods to employ when conducting your assessment projects that make evaluation of individual instructors impossible.

## Couldn't Assessment Results Be Used to "Punish" Under-Performing Departments or Programs?

Some instructors worry that when assessment results disclose problems in the achievement of outcomes in particular courses or programs, those programs will suffer. But the evidence suggests that this fear is unwarranted. Programs may occasionally need to be eliminated or downsized (e.g., most of the nation's major colleges and universities had Home Economics departments as recently as 50 years ago), but outcomes assessment is not a particularly useful method for identifying that need, nor has it ever (as far as we can determine) been used for that purpose. Typically, in fact, when outcomes assessment reveals a problem in student achievement of a learning goal, this becomes compelling evidence in support of a program's request for resources intended to meliorate the problem. It may seem counter-intuitive, but departments and schools should feel they have a logistical incentive to probe for learning deficiencies in courses and programs.

## Isn't Assessment Really A Variation of "No Child Left Behind"?

The short answer is "not as long as faculty are in control of the process." College and university faculty have been given an opportunity that was never given to their K12 counterparts. We are in charge of defining the outcomes, developing methods for assessing them, and determining how to interpret the results. Administrators and politicians have so far stayed essentially out of the process—only asking that it take place. No one is telling us, for example, to employ, a particular standardized test to measure critical thinking—or even telling us to employ a standardized test at all. (The Spellings Commission Report on Higher Education, published in September 2006, does argue for some standardized testing of general education skills like writing and critical thinking, but it stops well short of mandating it.) The best way to forestall the imposition of a "No College Student Left Behind" program of national testing on colleges and universities is to embrace this opportunity to do authentic outcomes assessment—to develop and implement our own methods, ones that fit our own individual departments and schools and our institution's culture.

## Doesn't Assessment Threaten Academic Freedom?

If assessment meant standardized instruction, scripted lessons, and mandated common tests, it certainly would. But it doesn't. Assessment actually leads in many cases to less standardization, not more. Any instructor teaching two sections of the same class will probably find, through the use of classroom-based assessment techniques, that each will require substantially different pedagogical approaches. Nothing in the assessment literature suggests that all instructors should teach in similar ways.

Some departments may find it useful, *upon occasion*, to employ common prompts (and possibly even common finals or common questions embedded in otherwise instructor-specific finals) in order to generate meaningful assessment results. Others may decide not to do that at all.

Assessment does encourage instructors of the same courses or program to collaborate on the generation of common learning outcomes for the course or program—though each instructor may very well have, in addition, idiosyncratic outcomes of her or his own. Outcomes assessment would suggest that no two Psychology 210 classes will be the same, or have identical learning outcomes—but that any student taking Psychology 210, no matter who teaches the course, will leave it being able to do or know some things in common. Since no one seriously argues that students shouldn't expect to get a common core of knowledge and/or skill in a particular course or program no matter who teaches it, it's difficult to entertain seriously the argument that this threatens academic freedom.

## Doesn't Assessment Reduce Learning to Only That Which Can Be Easily Measured?

No—unless we have a very limited notion of what the word “measure” means. As instructors, we measure complex forms of learning in our classrooms all the time, and there’s no reason why outcomes assessment can’t do that as well. Barbara Walvoord, an outcomes assessment specialist at Notre Dame, has written of assessment that it “does not limit itself only to learning that can be objectively tested. It need not be a reductive exercise. Rather, a department can state its highest goals, including such goals such as students’ ethical development, understanding of diversity, and the like. Then it can seek the best available indicators about whether those goals are met.” Some learning objectives may not lend themselves as readily to measurement as others, no matter how creatively we try to look for evidence they’ve been met. But nothing in the outcomes assessment literature suggests we should reduce learning only to those forms that can easily detected or counted numerically.

## Isn't Assessment Just an Educational Fad—Likely to Disappear As So Many Other Previous “Improvement” Initiatives Have?

Some experienced instructors believe that outcomes assessment is simply the educational flavor of the month—or year—and can be ignored (or out-waited) because it is likely to go the way of so many other pedagogical dodos. This does not seem likely to happen, however. As noted elsewhere in this document, assessment is not a recent methodology, and assessment in general is clearly in the ascendancy throughout the country today, an integral measure of institutional effectiveness as defined by every regional accrediting commission. If assessment is a fad, it’s one of the longest-lived fads in American history. At its core, outcomes assessment means looking for evidence about patterns of student learning achievement in an effort both to document and improve that learning. It’s likely that the specific methods we employ to do assessment will evolve in the coming years. But it seems highly unlikely to expect the need to gather evidence and use it for improvement will somehow mysteriously vanish.

## How Can Instructors Be Expected to Find the Time to Do This Work?

The assessment committee understands very well that UMKC professors are busy (and often exhausted) people, not only with teaching and research responsibilities but with what can sometimes seem like endless amounts of committee work. No one wants to impose the kinds of additional burdens on instructors that might lead to resentment or burnout. We’ve found, however, that meaningful forms of outcomes assessment can be done with only a modest amount of time committed to the process. We also believe that the time spent doing assessment is so intrinsically valuable that it can be seen as one of the best forms of professional development available to us. And the time spent on this work can often be regained at the “back end,” when we find, as a result of our assessment efforts, that our teaching and curricula grow more efficient. We believe we can help departments and schools develop assessment plans that are not unduly burdensome. *Assessment is, to a great extent, simply a more systematic effort to do what responsible instructors are already doing on their own.*

## IV. How to Assess Student Learning at the Program Level

Assessment can either be *direct*, focusing on actual student work (essays, exams, nationally normed tests) where we look for evidence that learning has been achieved, or *indirect*, where we look for signs that learning has taken place through proxies or such “performance indicators” as surveys, focus groups, retention or transfer rates, etc. Both methods of assessment can be valuable, and in fact the assessment experts agree that no single assessment method should ever be relied on exclusively. The first step to any assessment plan is to define the student learning outcomes for the program (or course) under consideration: the things we want students to be able to do (or think or know) by the time they’ve finished a course of study.

### Student Learning Outcomes

Student learning outcomes for courses or programs should share the following characteristics:

- They should describe the broadest and most comprehensive goals of the course or program, what assessment theorist Mark Battersby refers to as “integrated complexes of knowledge” or competencies. They should focus on what a student should be able to do with the knowledge covered, not simply on what the instructor will cover. Courses and programs may typically have three to five outcomes, though fewer or more are possible.
- They should employ active verbs, usually taken from the higher levels of Bloom’s taxonomy (reprinted in the appendix to this document)—e.g., students should be able to “analyze” or “evaluate,” not “define” or “describe.”
- As much as possible, they should be written in intelligible language, understandable to students.
- As often as possible, they should arrived at collaboratively, as instructors who teach the same class or in the same program come to consensus about the key objectives of that unit of instruction. (For course-level SLOs, instructors will undoubtedly have SLOs of their own in addition to consensus ones.) Adjunct instructors—and students themselves—should be involved in the process of developing SLOs as much as possible.
- SLOs should be measurable. Ideally, they should contain or make reference to the *product* (papers, projects, performances, portfolios, tests, etc. through which students demonstrate competency) and the *standard* (e.g., “with at least 80% accuracy”) or criterion by which success is measured. When the behavior/product and standard are specified, the SLO is sometimes referred to as made “operational.”

Sample program-level SLOs, therefore, might look something like this:

- (a simple SLO for English majors) “At graduation, English majors are able to write a clear, coherent, persuasive, and correct essay demonstrating their ability to analyze and interpret texts, to apply secondary criticism to them, and to explain their contexts.” (University of Texas-Arlington)
- (an operational SLO for English majors) “80% of a sample of senior-level English majors in upper-division literature courses will be able to score at least 70% on a test designed to measure their success in identifying authors, in placing them in their historical periods, in identifying the literary genres that they produce, and in knowing the titles of their major works.” (University of Texas-Arlington)
- (a simple SLO for Biology majors): “[Students should be able to] apply ethical principles of the discipline in regard to animal and human subjects, environmental protection, use of sources, and collaboration with colleagues.” (Walvoord, 2004)
- (an SLO for honors Political Science majors): “[Students should be able to] identify a problem [in the discipline], situate it within an appropriate literature, pose a particular hypothesis or intellectual puzzle, then use original sources to test the hypothesis or solve the puzzle.” (Walvoord, 2004)
- (an SLO for Economics majors): “[Students should be able to] use statistical methods to analyze economic questions” (Walvoord, 2004).
- (an SLO for the MBA at Central Michigan University): “[Students should be able to] apply the strategic management process and formulate firm strategy.”
- (an SLO for the J.D. degree at Georgia State University): “Students will demonstrate effective use of the tools of legal research (both hard copy and online tools), be able to create an effective research plan for assessing a legal problem, and demonstrate the ability to use appropriate citation form for advocacy and expositive legal writing.”

## Direct Assessment Methods

Some effective direct assessment methods that can be employed to measure achievement of SLOs in courses or programs include

- *Embedded assessment*, in which instructors use existing tests, exams, or writing prompts to identify

learning trends in a particular course or group of related courses. A particular department might agree to give a common final in which questions are mapped to specific learning outcomes for the course, then the results aggregated. (A variation of this approach would require all instructors in a course to ask a set of common questions on a part of an exam, but permit them to develop instructor-specific questions for the rest of the exam.) Another department might simply decide to look at student writing on a variety of late-term essay assignments for evidence that certain learning outcomes have been met. The main advantage of embedded assessment is that it simplifies the assessment process, asking instructors to evaluate existing student work, but in a different way than they usually do and for a different purpose. It's usually good practice to collect such assessment data so as to make evaluation of individual instructors impossible.

- *Portfolios*, which require students (or instructors) to assemble a group of projects from a single class or group of classes as a way of demonstrating that achievement of learning outcomes has taken place—and to reveal areas of learning deficiency. This is a particularly effective method of assessing institutional learning outcomes.
- *Capstone courses* are usually ones taken in a student's senior year and intended to allow students to demonstrate comprehensive knowledge and skill in the particular major. Capstone courses (and capstone projects usually required in such course) integrate knowledge and skills associated with the entire sequence of courses that make up the program. Assessing student performance in these classes therefore approximates assessment of student performance in the major as a whole.
- *Standardized tests*, particularly nationally normed tests of such institution-wide learning outcomes as critical thinking or writing, or discipline-specific tests like the ETS Major Field Achievement Tests. Standardized tests may be useful measures if instructors agree to teach the skills that such tests can be shown to measure, and they have the advantage of providing departments with a national standard by which to measure their students. But standardized tests are costly to administer; students are often insufficiently motivated to do their best work when taking them; and as noted, they may not measure what faculty in the program actually teach.

## Indirect Assessment Methods

- *Student surveys and focus groups*. A substantial body of evidence suggests that student self-reported learning gains correlate modestly with real learning gains. You may want to consider surveying students (or a sampling of students) at the end of a course of instruction (or after graduation from a program) to determine what they see as their level of achievement of the course or program's learning outcomes. You may also want to gather a representative group of students together for more informal conversation about a particular course or program when it has ended, asking them open-ended questions about its effect upon them. Surveys of alumni can also produce meaningful assessment data. These techniques are particularly valuable when done in conjunction with more direct assessment measures.
- *Faculty surveys*. Instructors can be asked, via questionnaires, about what they perceive to be strengths and weaknesses among their students.
- *Data likely to be kept by Offices of Institutional Research* on retention, success, and persistence, job placement information, rates of acceptance into graduate programs, demographics, etc. may also be strong assessment tools, if analyzed and mapped to specific SLOs.
- *Classroom Assessment Techniques*. The UMKC assessment committee encourages instructors to familiarize themselves (and routinely employ) some of the classroom-based assessment techniques that Thomas Angelo and Patricia Cross detail in their text on the subject, cited in the appendix. For example, instructors

might use the “minute paper” at the end of a class period to have students respond quickly and anonymously to two questions: “what was the most important thing you learned today?” and “what important question remains unanswered?” CATs are ideal ways of helping instructors in specific classes determine what their students know and don’t know, or are having difficulty learning. When you adjust teaching practices in light of the information you gather from a CAT, you’re completing the feedback loop that is successful outcomes assessment. If members of your discipline agree to employ CATs regularly, consider detailing their efforts in a document that can become part of an annual assessment report.

One caveat: indirect assessment measures should be used to augment, not substitute for, more direct measures. Ideally, in fact, *multiple* assessment methods should be employed whenever possible, so that student surveys (for example) can become a useful additional check against data derived from doing embedded assessment or administering standardized tests.

### Additional Tools for Assessing Student Learning

- *Scoring rubrics* enable us to assess student performance captured in portfolios, capstone courses, essays, speeches, or other presentations. Individual instructors can employ them on their own, too. Look at a specific assignment—an essay, a demonstration, an oral report—in which student learning cannot be measured with numerical precision. Develop (whether alone or with others) a scoring guide or checklist that will indicate various skill levels for various “primary traits,” with clearly delineated language suggesting the degree to which the assignment demonstrates evidence that the SLO has been achieved. If our SLO were “students should be able to write an adequately developed, well-organized essay that contains few major errors in grammar or diction,” a simple rubric by which to assess sample essays might look something like this:

Learning Outcome	1-little or no evidence	2-insufficient evidence	3-adequate evidence	4-clear evidence
Organization, Focus, and Coherence	A very disorganized essay, with inadequate or missing introduction, conclusions, and transitions between paragraphs.	An essay with significant organization problems, and/or inadequate introduction, conclusion, and/or transitions.	An organized essay, though perhaps marginally so, with adequate introduction, conclusion, and transitions.	A well-organized essay, with effective introduction and conclusion and logical transitions between paragraphs
Development	An essay with major development problems: insufficient, confusing, and/or irrelevant support for major points.	An essay with significant development problems: support for major points often insufficient or confusing.	A developed essay, though perhaps marginally so, with adequate support for most major points.	A very well developed essay, with full and effective support for all major points.
Conventions of Written English	Many significant errors in grammar, punctuation, and/or spelling.	Frequent minor errors and occasional major errors in grammar, punctuation, and/or spelling	Occasional minor errors but infrequent major errors in grammar, punctuation, and spelling.	Few or no errors in grammar, punctuation, or spelling.

This is an example of an *analytic* rubric, in which multiple performance criteria, or primary traits, are assessed individually. A *holistic* rubric aggregates these criteria into a single grading scale, so that (for example) and “A”

essay might be distinguished by all of the features noted under a “4” above: with particular characteristics having to do with organization, development, and so on. A holistic rubric is useful for grading purposes, but it is typically too crude a measure to be employed in outcomes assessment work.

Rubrics can be developed collaboratively with students, and in the classroom setting they have the additional advantage of helping to make grading practices as transparent as possible. As assessment tools, part of their value is that they require instructors to “norm” themselves against a set of consensus evaluative criteria, enabling us to define (and hold to) our common teaching goals more sharply than we might otherwise do. Rubrics also let us identify specific areas where our students are having trouble achieving significant learning outcomes for our courses.

- *Course-Program Matrices*, described more fully in Appendix C, enable departments and schools to map learning outcomes of individual courses against desired outcomes for the programs that comprise those courses. This allows us to demonstrate that students who complete the courses successfully have achieved the programmatic outcomes. It also reveals gaps in curriculum (programmatic outcomes without courses that map to those outcomes) that need to be addressed.

## V. Outcomes Assessment Guidelines for UMKC Programs

In October 2004, Provost Bill Osborne established a new standing committee, comprised of faculty members representing all academic units, to “define and implement program evaluation at UMKC.” Among the Program Evaluation Committee’s charges were 1) “Developing and implementing a campus wide program evaluation process which focuses on continuous academic program quality improvement,” and 2) “Incorporating the expectations of the NCA Higher Learning Commission into UMKC’s evaluation processes” in preparation for the 2008-9 accreditation site visit.

The new program evaluation process requires every department and school to develop, and eventually implement, a comprehensive strategy to identify and assess achievement of student learning outcomes in each of their programs.

Departments and schools should be routinely engaged in course- and program-focused outcomes assessment, with project cycles undertaken and completed every year. Departments and schools should also participate in institution-level assessment whenever asked, helping to define, measure, and improve general education outcomes and other outcomes related to the institution as a whole.

### Suggested strategy

1. Work **collaboratively** to identify learning outcomes for each program in your school or department, including graduate and undergraduate degree patterns. Outcomes written several years ago might benefit from revision, particularly if they were composed by a single person or not cast in outcomes language in the first place. Many schools will need to ensure that their outcomes statements align properly with accreditation standards that govern those professions.
2. Once programmatic outcomes are defined, ask faculty who teach courses in the program to complete the course-program matrix (Appendix C). Compile and analyze them.
3. Identify method(s) of assessing one or more outcomes. (It’s much better to complete a single assessment cycle focused on a single outcome than to begin many such cycles without finishing any one of them.) Make sure the assessment method is clearly linked to the specific SLO and is well suited for assessing the intended SLO. Try to employ two methods of assessment, at least one of them direct.
4. Conduct assessments, gather and interpret results, use results to improve teaching and learning.
5. Develop a plan, including a timeline, for future assessment cycles.
6. As you implement your assessment strategies, document everything you’re doing as evidence to be presented in annual assessment updates, program evaluations, etc.

### Need Assistance?

When questions arise, please contact Rick Axelson, Assistant Vice Provost for Institutional Research, Assessment, and Planning (ext. 6443, e-mail axelsonr@umkc.edu).

## VI. Glossary

**Assessment:** Outcomes assessment is any systematic inquiry whose goal is to improve the teaching/learning process. It can be understood more precisely as a three-step process of 1) defining what students should be able to do, think, or know at the end of a unit of instruction (defining, that is, the *student learning outcomes*), 2) determining whether, and to what extent, students can do, think, or know it, and 3) using this information to make improvements in teaching and learning.

**Authentic Assessment:** Assessments that involve engaging tasks built around important questions in a particular field of study. The tasks typically require students to produce a significant product or performance. Authentic assessments are usually accompanied by explicitly defined standards.

**Benchmark:** A point in time (e.g., the sophomore year) or a performance standard (e.g., 80% of the students in a particular group will score at a particular level) which measures student progress.

**Direct/Indirect Assessment:** *Direct assessment* requires students to display their knowledge and skills in response to the measurement instrument itself, as in tests or exams, essays, portfolios, presentations, etc. *Indirect assessment* usually asks students to reflect on their learning rather than demonstrate it (as in interviews, surveys, focus groups, etc.). Indirect assessment may also ask employers or other interested parties to evaluate student learning as they have had occasion to observe it. Both forms of assessment are valuable, particularly when used in tandem.

**Embedded Assessment:** Using existing coursework (e.g., common questions asked of all students on a final exam in every section of a course) as a means of assessing student learning in aggregate. Collecting assessment information from within the classroom provides an opportunity to use already in-place assignments and coursework for assessment purposes. This involves taking a second look at materials generated in the classroom.

**Formative/Summative Assessment:** Formative assessment is any evaluation taking place during the course of instruction; summative assessment is an evaluation that takes place at the end of a unit of instruction. Formative assessment enables assessors to modify instructional practices in time to improve learning for the particular students being assessed. Summative assessment results inform changes in pedagogy or curriculum for future students. Both forms of assessment can be useful.

**Learning Outcome:** What students can be expected to do, think, or know as a result of a particular course of study. Outcomes are performance oriented, focusing less on what instructors will cover in a course or what their instructional goals are (these are often designated as “objectives”) than on what students can produce, perform, or achieve as a marker of success in the course or program. Outcomes are integrated complexes of knowledge and skill.

**Portfolio:** Any purposeful collection of work done by a particular student. The term, of course, is borrowed from the practice of artists, who assemble samples of their paintings for evaluation, sale, etc. Students themselves are usually encouraged to gather the materials for their portfolios themselves, often using a selection process specifying various criteria. Portfolios are then usually evaluating against a rubric. Aggregating the data as one evaluates a number of portfolios in a single class or program (or even across an entire institution) leads to potentially rich outcomes assessment data. Increasingly, portfolios are being digitalized in what are called *electronic portfolios* or *e-portfolios*. Besides their value for assessment purposes, portfolios potentially enable students to demonstrate their achievement to prospective employers, graduate schools, etc.

**Qualitative/Quantitative Assessment:** Quantitative assessment results can be expressed in numerical terms; qualitative assessments are usually expressed in narrative form. In many cases, qualitative assessment can be converted to quantitative through the use of rubrics. Both forms of assessment can be valuable.

**Reliability:** The measure of consistency for an assessment instrument. The instrument should yield similar results over time with similar populations in similar circumstances. (Contrast with *validity*.)

**Rubric (Analytic vs. Holistic):** A rating scale with explicit criteria, used to evaluate any performance, including essays, speeches, presentations, etc. Essays may group various performance criteria under each numerical category (a holistic rubric), or break out each criterion separately and allow for different ratings for each distinct criterion (an analytic rubric). Holistic rubrics are useful for grading purposes, but analytic rubrics are more effective for doing outcomes assessment, since they capture very specific performance characteristics.

**Standardized Test:** Any test given and scored in a uniform manner. Questions on standardized tests are selected after trials for appropriateness and difficulty. Guidelines provided with such tests attempt to eliminate extraneous interference that might influence test results.

**Validity:** The extent to which the assessment measures the desired performance and appropriate inferences can be drawn from the results. A valid assessment accurately measures the learning it claims to measure.

(Some definitions adapted from the Washington Commission on Student Learning, 2000 or from the James Madison University assessment website)

## VII. Appendices

### A. University Assessment Committee Members

Rick Axelson, Ph.D. Assistant Vice Provost Institutional Research, Assessment and Planning Office of the Provost/Academic Affairs University of Missouri-Kansas City	Linda Breyspraak Associate Professor, Sociology & Medicine Chair, Department of Sociology/Criminal Justice & Criminology College of Arts & Sciences University of Missouri-Kansas City	Steve Kranz, Ph.D. Associate Professor School of Nursing University of Missouri-Kansas City
Max J. Skidmore Thomas Jefferson Fellow University of Missouri Curators' Professor of Political Science College of Arts & Sciences University of Missouri-Kansas City	Pamela Overman, Ed.D. Associate Professor and Associate Dean for Academic Affairs School of Dentistry University of Missouri-Kansas City	Joseph Parisi, Ph.D. Assistant Professor Instrumental Music Education Conservatory of Music and Dance University of Missouri-Kansas City
Steven Go, MD Associate Professor of Emergency Medicine Assistant Dean for Medical Education Department of Emergency Medicine Office of Medical Education and Research School of Medicine University of Missouri-Kansas City	Peggy Mullaly-Quijas, Ph.D. Assistant Director for the Health Sciences Libraries University Libraries University of Missouri-Kansas City	Marcus Iszard, Ph.D. Director of Assessment Affiliate Associate Professor Pharmacology/ Toxicology School of Pharmacy University of Missouri-Kansas City
Barbara Glesner-Fines Ruby M. Hulen Professor of Law School of Law University of Missouri-Kansas City	Steve LaNasa Associate Dean School of Education University of Missouri-Kansas City	Leon H. Robertson, Ph.D. Director of the Center for International Business Professor of Strategic and International Management Bloch School of Business & Public Administration University of Missouri-Kansas City

## B. AAHE Nine Principles of Good Practice for Assessing Student Learning

- 1. The assessment of student learning begins with educational values.** Assessment is not an end in itself but a vehicle for educational improvement. Its effective practice, then, begins with and enacts a vision of the kinds of learning we most value for students and strive to help them achieve. Educational values should drive not only what we choose to assess but also how we do so. Where questions about educational mission and values are skipped over, assessment threatens to be an exercise in measuring what's easy, rather than a process of improving what we really care about.
- 2. Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time.** Learning is a complex process. It entails not only what students know but what they can do with what they know; it involves not only knowledge and abilities but values, attitudes, and habits of mind that affect both academic success and performance beyond the classroom. Assessment should reflect these understandings by employing a diverse array of methods, including those that call for actual performance, using them over time so as to reveal change, growth, and increasing degrees of integration. Such an approach aims for a more complete and accurate picture of learning, and therefore firmer bases for improving our students' educational experience.
- 3. Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes.** Assessment is a goal-oriented process. It entails comparing educational performance with educational purposes and expectations -- those derived from the institution's mission, from faculty intentions in program and course design, and from knowledge of students' own goals. Where program purposes lack specificity or agreement, assessment as a process pushes a campus toward clarity about where to aim and what standards to apply; assessment also prompts attention to where and how program goals will be taught and learned. Clear, shared, implementable goals are the cornerstone for assessment that is focused and useful.
- 4. Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes.** Information about outcomes is of high importance; where students "end up" matters greatly. But to improve outcomes, we need to know about student experience along the way -- about the curricula, teaching, and kind of student effort that lead to particular outcomes. Assessment can help us understand which students learn best under what conditions; with such knowledge comes the capacity to improve the whole of their learning.
- 5. Assessment works best when it is ongoing not episodic.** Assessment is a process whose power is cumulative. Though isolated, "one-shot" assessment can be better than none, improvement is best fostered when assessment entails a linked series of activities undertaken over time. This may mean tracking the process of individual students, or of cohorts of students; it may mean collecting the same examples of student performance or using the same instrument semester after semester. The point is to monitor progress toward intended goals in a spirit of continuous improvement. Along the way, the assessment process itself should be evaluated and refined in light of emerging insights.
- 6. Assessment fosters wider improvement when representatives from across the educational community are involved.** Student learning is a campus-wide responsibility, and assessment is a way of enacting that responsibility. Thus, while assessment efforts may start small, the aim over time is to involve people from across the educational community. Faculty play an especially important role, but assessment's questions can't be fully addressed without participation by student-affairs educators, librarians, administrators, and students. Assessment may also involve individuals from beyond the campus (alumni/ae, trustees, employers) whose experience can enrich the sense of appropriate aims and standards for learning. Thus understood, assessment is not a task for small groups of experts but a collaborative activity; its aim is wider, better-informed attention to student learning by all parties with a stake in its improvement.
- 7. Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.** Assessment recognizes the value of information in the process of improvement. But to be useful, information must be connected to issues or questions that people really care about. This implies assessment approaches that produce evidence that relevant parties will find credible, suggestive, and applicable to decisions that need to be made. It means thinking in advance about how the information will be used, and by whom. The point of

assessment is not to gather data and return "results"; it is a process that starts with the questions of decision-makers, that involves them in the gathering and interpreting of data, and that informs and helps guide continuous improvement.

8. **Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change.** Assessment alone changes little. Its greatest contribution comes on campuses where the quality of teaching and learning is visibly valued and worked at. On such campuses, the push to improve educational performance is a visible and primary goal of leadership; improving the quality of undergraduate education is central to the institution's planning, budgeting, and personnel decisions. On such campuses, information about learning outcomes is seen as an integral part of decision making, and avidly sought.
9. **Through assessment, educators meet responsibilities to students and to the public.** There is a compelling public stake in education. As educators, we have a responsibility to the publics that support or depend on us to provide information about the ways in which our students meet goals and expectations. But that responsibility goes beyond the reporting of such information; our deeper obligation -- to ourselves, our students, and society -- is to improve. Those to whom educators are accountable have a corresponding obligation to support such attempts at improvement.

### C. Bloom (et al.)'s Taxonomy of the Cognitive Domain

(adapted from Valdasta State University)

Beginning in 1948, a group of educators undertook the task of classifying education goals and objectives. The intent was to develop a classification system for three domains: the cognitive, the affective, and the psychomotor. Work on the cognitive domain was completed in 1956 and is commonly referred to as *Bloom's Taxonomy of the Cognitive Domain* (Bloom et al., 1956). Others have developed taxonomies for the affective and psychomotor domains.

The major idea of the taxonomy is that what educators want students to know can be arranged in a hierarchy from less to more complex. The taxonomy is presented below with sample verbs and a sample behavior statement for each level.

LEVEL	DEFINITION	SAMPLE VERBS	SAMPLE BEHAVIORS
KNOWLEDGE	Student recalls or recognizes information, ideas, and principles in the approximate form in which they were learned.	Write List Label Name State Define	The student will define the 6 levels of Bloom's taxonomy of the cognitive domain.
COMPREHENSION	Student translates, comprehends, or interprets information based on prior learning.	Explain Summarize Paraphrase Describe Illustrate	The student will explain the purpose of Bloom's taxonomy of the cognitive domain.
APPLICATION	Student selects, transfers, and uses data and principles to complete a problem or task with a minimum of direction.	Use Compute Solve Demonstrate Apply Construct	The student will write an instructional objective for each level of Bloom's taxonomy.

<b>ANALYSIS</b>	<b>Student distinguishes, classifies, and relates the assumptions, hypotheses, evidence, or structure of a statement or question.</b>	<b>Analyze Categorize Compare Contrast Separate</b>	<b>The student will compare and contrast the cognitive and affective domains.</b>
<b>SYNTHESIS</b>	<b>Student originates, integrates, and combines ideas into a product, plan or proposal that is new to him or her.</b>	<b>Create Design Hypothesize Invent Develop</b>	<b>The student will design a classification scheme for writing educational objectives that combines the cognitive, affective, and psychomotor domains.</b>
<b>EVALUATION</b>	<b>Student appraises, assesses, or critiques on a basis of specific standards and criteria.</b>	<b>Judge Recommend Critique Justify</b>	<b>The student will judge the effectiveness of writing objectives using Bloom's taxonomy.</b>

In general, research over the last 40 years has confirmed the taxonomy as a hierarchy with the exception of the last two levels. It is uncertain at this time whether synthesis and evaluation should be reversed (i.e., evaluation is less difficult to accomplish than synthesis) or whether synthesis and evaluation are at the same level of difficulty but use different cognitive processes.

#### D. A Sample Course-Program Assessment Matrix

This is the simplest matrix that allows a department to gather information about assessment being conducted in its courses and to map that information against its broader, degree-level goals. Each instructor in the department fills out the first matrix for the courses she or he teaches, then the department aggregates the data. This allows the department to see where it has disparate goals within the same course, and whether all of its outcomes are being assessed somewhere in the curriculum.

#### Completed by Each Instructor for His/Her Own Courses

<b>Name of Instructor:</b> Axelson					
Degree Program Learning Outcomes [listed and numbered]					
To the Instructor: For each course you taught last year or are teaching this year, place an X under every goal that you actively teach and significantly assess in a major exam or project. Leave the other cells blank.					
Course	Program SLO 1	Program SLO 2	Program SLO 3	Program SLO 4	Program SLO 5
101	X	X			
102					
103					
104					
201					
230	X	X	X		

231					
300					
314			X	X	
(and so on)					

### Department-Wide Summary

Course	Program SLO 1	Program SLO 2	Program SLO 3	Program SLO 4	Program SLO 5
101	100%	45%			
102	100%		100%		
103		84%	45%	59%	5%
104		37%	58%	100%	
201	100%	100%	100%		
(and so on)					

(adapted from Barbara Walvoord, *Assessment Clear and Simple*)

## E. Further Reading

- Banta, Trudy W., ed. *Hallmarks of Effective Outcomes Assessment*. San Francisco: Wiley, 2004.
- . *Portfolio Assessment; Uses, Cases, Scoring, and Impact*. San Francisco: Wiley, 2003.
- Greater Expectations Project on Accreditation and Assessment. *Taking Responsibility for the Quality of the Baccalaureate Degree*. Washington, D.C.: Association of American Colleges and Universities, 2004.
- Palomba, C.A. and Trudy W. Banta. *Assessment Essentials: Planning, Implementing and Improving Assessment in Higher Education*. San Francisco: Jossey Bass, 1999.
- Suskie, Linda. *Assessing Student Learning: A Common Sense Guide*. Bolton, MA: Anker, 2004.
- Walvoord, Barbara E. *Assessment Clear and Simple: A Practical Guide for Institutions, Departments, and General Education*. San Francisco: Jossey Bass, 2004.
- Walvoord, Barbara E. and Virginia J Anderson. *Effective Grading: A Tool for Learning and Assessment*. San Francisco: Jossey Bass, 1998.
- Wergin, John. F. and Judi N. Swingen. *Departmental Assessment: How Some Campuses Are Effectively Evaluating the Collective Work of Faculty*. Washington D.C.: American Association for Higher Education, 2000.

## F. Assessment Websites

### General

- The University of South Florida's website containing department-level examples of student learning outcomes and assessment methods: <http://www.ie.usf.edu/OA/>
- North Carolina State University's comprehensive website, with many links to other assessment resources: <http://www2.acs.ncsu.edu/UPA/assmt/resource.html>
- Angelo and Cross's Teaching Goals Inventory at <http://www.uiowa.edu/~centeach/tgi/book.html>
- California State University's learning outcomes assessment website: <http://calstate.edu/AcadAff/SLOA/>
- Central Michigan University lists SLOs by college for each major: <http://www.provost.cmich.edu/outcomes/>
- Boise State University's website contains links to program assessment plans organized by college: <http://www2.boisestate.edu/iassess/outcomes/outcomes.htm>
- Oklahoma State University offers assessment method examples and assessment plan tips and checklist: <http://www.>

[okstate.edu/assess/assessment\\_plans/assessment\\_plans.htm](http://okstate.edu/assess/assessment_plans/assessment_plans.htm)

- Portland State University's general overview of the assessment process: <http://www.pdx.edu/cae/assessment.html>
- The University of Wisconsin's website has excellent advice about using the various types of direct and indirect assessment: <http://www.provost.wisc.edu/assessment/manual/manual2.html#a2>

## Writing Student Learning Outcomes

- The Teachopolis website contains useful program tools for building SLOs: <http://www.teachopolis.org/myTA/index.html>
- The University of Virginia's website, focusing on writing program-level outcomes: <http://www.web.virginia.edu/iaas/assessment/outcomes.htm>
- How to write SLOs, from Kansas State University: <http://www.k-state.edu/assessment/slo/instructions.htm>
- Kingston University's comprehensive "how to" guide for SLOs: [http://www.kingston.ac.uk/adc/writing\\_learning\\_outcomes.pdf](http://www.kingston.ac.uk/adc/writing_learning_outcomes.pdf)

## Using Embedded Assessment Techniques

- "Synopsis of the Use of Course-Embedded Assessment in a Medium Sized Public University's General Education Program" by Helen Gerretson: <http://www4.nau.edu/assessment/main/research/webtools.htm>
- Skidmore College's overview of embedded assessment: [http://www.skidmore.edu/administration/assessment/H\\_embedded\\_assessment.htm](http://www.skidmore.edu/administration/assessment/H_embedded_assessment.htm)
- Course-embedded assessment techniques from the University of Wisconsin assessment website: <http://www.provost.wisc.edu/assessment/manual/manual2.html#a2>

## Writing and Using Rubrics

- Good sample rubrics at the University of Wisconsin—Stout website: <http://www.uwstout.edu/soe/profdev/rubrics.shtml>
- "Recommendations for Developing Classroom Performance Assessments and Scoring Rubrics" from Barbara M. Moskal of the Colorado School of Mines: <http://pareonline.net/getvn.asp?v=8&n=14>
- An annotated list of rubric resources, including sites with rubric generators: [http://www.techlearning.com/db\\_area/archives/WCE/archives/evalguid.php](http://www.techlearning.com/db_area/archives/WCE/archives/evalguid.php)
- A comprehensive rubric site from San Diego State University: <http://webquest.sdsu.edu/rubrics/weblessons.htm>
- Portland State University's rubric bank: [http://www.pdx.edu/cae/rubric\\_bank.html](http://www.pdx.edu/cae/rubric_bank.html)

## Portfolio/eportfolios

- Dr. Helen Barrett's site linking to many other portfolio resources: <http://electronicportfolios.org/portfolios/bookmarks.html>
- The North Carolina State University assessment resources website, cited above in General resources, lists more than 10 sites that describe university-level portfolio projects, including that at Truman State: <http://assessment.truman.edu/components/portfolio/>
- Every student in the state of Minnesota is encouraged to develop an eportfolio, described at <http://www.>

[efoliominnesota.com/](http://efoliominnesota.com/)

- The University of Denver's "portfolio community" allows browsing of eportfolio examples to registered guests: <https://portfolio.du.edu/pc/index>

## Classroom Assessment Techniques

- Southern Illinois University-Edwardsville's comprehensive site devoted to CATs: <http://www.siu.edu/~deder/assess/catmain.html>
- A general description of CAT theory and practice, taken from Angelo and Cross, from the University of Hawaii: <http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/assess-1.htm>
- Hawaii describes 50 specific CATs at a separate website: <http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/assess-2.htm>
- Another very good overview of CAT methodology, with examples, from Vanderbilt University: [http://www.vanderbilt.edu/cft/resources/teaching\\_resources/assessment/cats.htm](http://www.vanderbilt.edu/cft/resources/teaching_resources/assessment/cats.htm)

## Student Surveys

- A comprehensive site on using student surveys for outcomes assessment, by the University of Illinois: [http://www.apssa.uiuc.edu/content/conducting\\_surveys/conducting\\_surveys.html](http://www.apssa.uiuc.edu/content/conducting_surveys/conducting_surveys.html)
- Web-based survey instruments from the University of Northern Arizona: <http://www4.nau.edu/assessment/main/research/webtools.htm>

## Focus Groups

- How to organize and conduct a focus group for outcomes assessment purposes at the University of Texas-Austin's assessment website: [http://www.utexas.edu/academic/diia/assessment/iar/how\\_to/methods/focus\\_groups.php](http://www.utexas.edu/academic/diia/assessment/iar/how_to/methods/focus_groups.php)
- An excellent overview of focus-group methodology from the National Park Service: [http://www.nps.gov/phso/rtcatoobox/gatinfo\\_focus.htm](http://www.nps.gov/phso/rtcatoobox/gatinfo_focus.htm)
- "Focus Groups as an Approach to Outcomes Assessment" by David W. Sink of the University of Arkansas-Little Rock: <http://arp.sagepub.com/cgi/content/abstract/21/3/197>