Radford University
Office of Institutional Effectiveness and Quality Improvement

Academic Assessment

Handbook

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Acknowledgements

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Introduction

Background

In recent decades, higher education has been put under the microscope more than ever before. The cases proffered against higher education are many, boding around lack of accountability to the stakeholders. The most commonly cited issues include: high tuition, increasing student debt load and declining loan repayment, delayed graduation, and graduates not demonstrating the requisite skills expected of a degree holder (such as communication skills, problem-solving skills, workplace adaptability, critical thinking skills, etc.).

Precipitating these concerns are the facts that tuition costs have been increasing more than the average family income and the perception that as education cost increases, the amount of learning taking place is declining. In other words, those who finance education are perceptibly not getting their money worth. The general feeling is that the public is being shortchanged by higher education to the extent that some contend that attending college is no longer worthwhile (Parker, 2014). On the other hand, Bridget Long (n.d.) conditionally agrees that higher education is still worth it, and Susan Brennan (n.d.) paraphrases the Pew Foundation survey results by saying that "the only thing more expensive than obtaining a college degree is not obtaining one" (p. 9).

What is actually lacking in the debate is that higher education institutions are yet to demonstrate the extent of learning taking place in colleges and universities in order to appease the critics. As pointed out by Brandon Busteed (2013), **"…** until we value what we measure, and measure what we value, Americans will continue to ask the question, 'Is college worth it?'" (p. 35). What we value most in higher education is learning, and this is why many institutions market themselves as a 'student-centered, learning institution.' One way to demonstrate the extent of learning is through assessment. Without convincing evidence, our assertions about student learning will be based on hunches or anecdotal evidence.

First and foremost, the main purpose of assessment is to improve student learning. The goal of a well-designed assessment process should be to answer important questions about students, programs, and the institution as a whole. While faculty regularly examine ways and means to improve student learning, the processes are usually not systematically documented.

In the past few decades, regional accreditors' measures of quality have shifted from *input-based* requirements (such as incoming students' test scores, the proportion full-time faculty holding Ph.D. degrees, the number of library book and journal collections, resource endowment, etc.) to *outcomes-based* requirements (such as measuring and demonstrating the extent of student learning through evidence-based approaches).

Today, accreditation agencies demand that assessment should be a systematic process of collecting and analyzing data for improvement of student learning. Due to such demands from accreditors, many institutions primarily focus their assessment efforts on compliance. For example, the national survey of provosts conducted by Kuh, Jankowski, Ikenberry, and Kinzie (2014) shows that the predominant driver for conducting assessment is to satisfy accreditation requirements. This position is understandable because of the strings attached to institutional accreditation related to student financial aid; students at unaccredited institutions are ineligible to receive the federal financial aid. However, assessment has more to do with commitment to student learning and continuous improvement than for compliance with external accreditors or for accountability to state and federal agencies. The fact is clear: public accountability matters, but student learning matters most.

External Drivers of Academic Assessment

The two external agencies asserting influence on the way assessments are conducted at Radford University include the State Council for Higher Education in Virginia (SCHEV) and the Southern Association for Colleges and Schools Commission on Colleges (SACSCOC). SACSCOC is one of the six regional accreditors of colleges and universities in the United States. SACSCOC serves eleven southern states (Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia) and Latin American institutions of higher education that award associate, baccalaureate, master's, or doctoral degrees.

As a state-funded public institution of the Commonwealth of Virginia, all the educational activities of RU are under the auspices of the State Council for Higher Education in Virginia (SCHEV). It is SCHEV's recommendation that the core curriculum for higher education institutions in Virginia must include the following six competency areas: *written communication, oral communication, critical thinking, information literacy, quantitative reasoning, and scientific reasoning*. Similarly, the SACSCOC Principles of Accreditation (2012) requires that the general education curriculum must include specific disciplinary areas, as stated in the Core Requirement (CR) below:

> CR 2.7.3 requires in each undergraduate degree program "the successful completion of a general education component at the collegiate level that (1) is a substantial component of each undergraduate degree, (2) ensures breadth of knowledge, and (3) is based on a coherent rationale. For degree completion in associate programs, the component constitutes a minimum of 15 semester hours or the equivalent; for baccalaureate programs, a minimum of 30 semester hours or the equivalent. These credit hours are to be drawn from and include at least one course from each of the following areas: humanities/fine arts; social/behavioral sciences; and natural science/mathematics. The courses do not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession. The institution provides a written justification and rationale for course equivalency...." (p. 19)

The SACSCOC Comprehensive Standard (CS) 3.5.1 on defining general education competencies states that:

"The institution identifies college-level general education competencies and the extent to which students have attained them" (p.29)

In addition, Comprehensive Standard 3.3.1 (Institutional Effectiveness) states that:

"The institution identifies expected outcomes, assesses the extent to which it achieves these outcomes, and provides evidence of improvement based on analysis of the results in each of the following areas:

3.3.1.1 educational programs, to include student learning outcomes

3.3.1.2 administrative support services

3.3.1.3 academic and student support services

3.3.1.4 research within its mission, if appropriate

3.3.1.5 community/public service within its mission, if appropriate" (p.27)

Consequent from the above-mentioned requirements, the assessment operations at RU are directed to follow certain rules and guidelines consistent with the external requirements. These rules and guidelines, however, do not preclude individual creativities to demonstrate what our students have learned and how we know that they have learned.

Internal Drivers of Academic Assessment

In academic programs that seek disciplinary accreditations, the quest for external validation of a program's quality becomes a strong driver of assessment in those fields. The accreditors set the minimum standards that respective programs must meet by demonstrating the extent to which stipulated student learning outcomes have been met. In this case, efforts are made to streamline the assessment efforts such that, with little modification, the same student learning outcomes will be used to satisfy the requirements for both the specialized accreditors and the SACSCOC requirements. Moreover, programs that have disciplinary accreditations are exempted from conducting a full-blown five-year academic program review because such programs periodically produce a self-study for their accreditors.

Since the primary purpose of conducting program assessment is to enhance student learning, assessment of learning is driven by the desire for continuous improvement. Assessment challenges the status quo by looking for new ways to accomplish a given task. This intentional act of experimentation could lead to innovation and to a drive for programmatic excellence. As the requirements for public accountability continue to escalate, it is increasingly important for each program to continually explore efficient ways for improving every facet of the educational processes.

An Overview of Academic Assessment at Radford University

The primary focus of academic assessment at Radford University has been on the Core Curriculum, academic programs, academic support areas, and the Quality Enhancement Program (QEP).

Core Curriculum
The oversight for assessing the Core Curriculum rests with the Faculty Senate-appointed Core Curriculum Assessment Committee (CCAC) (See Appendix A). Radford University's Core Curriculum is designed not only to ensure that students gain a foundation of knowledge rooted in the traditional liberal arts education, but also acquire applied skills critical to such knowledge. The RU faculty has defined 11 competency areas which every undergraduate student must successfully complete. For more information about RU's core curriculum learning outcomes, visit: http://www.radford.edu/content/core-curriculum/home/overview/outcomes.html

Academic Programs
The Office of Institutional Effectiveness and Quality Improvement is responsible for coordinating the assessment of all major and minor degree and certificate programs offered at the university in compliance with the Southern Association for Colleges and Schools Commission on Colleges' (SACSCOC) guidelines and requirements. The academic program assessment is conducted each academic year by faculty and the report for the prior academic year is due every October 1st to the Office of Institutional Effectiveness and Quality Improvement. The Office of Institutional Effectiveness and Quality Improvement staff provide assistance as needed to faculty to facilitate the process of completing this annual report.

College assessment committees, including a representative from each department, have been organized in the past year to open up a channel of communication on assessment processes and procedures to facilitate the implementation of programmatic assessments. The main objective of forming the committees was to break down information silos and to encourage cross-disciplinary learning about assessment.

Five-Year Academic Program Review
Radford University has adopted a systematic process of sequentially reviewing academic programs every five years. The oversight for implementing the five-year academic program review centrally lies with the Academic Program Review Committee, consisting of a representative from the Provost's Office, all college deans, a teaching faculty representative from each college, and the President of the Faculty Senate. Academic Program Review conducted every five years includes the information collected over the course of the past five Annual Academic Program Reports. However, the fifth-year report is more reflective and analytical in that it examines the programs' trend data and strategically projects the

development of the programs under review to the future. This comprehensive review is intended to determine the overall health, viability, and curricular integrity of the program, as well as to reflect upon assessment findings and the programmatic improvements made as a result of assessment. For more information on program review, visit: http://www.radford.edu/content/academic-assessment/home/program-review.html

This process conforms to the requirement in SACSCOC Core Requirement (CR) 2.5 which states that:

> "The institution engages in ongoing, integrated, and institution-wide research-based planning and evaluation processes that (1) incorporate a systematic review of institutional mission, goals, and outcomes; (2) result in continuing improvement in institutional quality; and (3) demonstrate the institution is effectively accomplishing its mission. (**Institutional Effectiveness**)" (p. 18)

Academic and Student Support Services

The SACSCOC Comprehensive Standard 3.3.1.3 states that academic and student support areas must specify expected outcomes and measure the extent by which the stated outcomes are being achieved (p. 27). Every program or unit in these areas is expected to submit an annual assessment report about the extent to which they have realized their expected outcomes. The Office of Institutional Effectiveness and Quality Improvement staff assist every academic support unit to develop an assessment plan and to effectively implement it.

Quality Enhancement Plan (QEP)

The regional accreditor for the southern region, SACSCOC, is unique among the six regional accreditors in the U.S. because it requires, in addition to other assessment areas discussed above, the completion of a Quality Enhancement Plan in partial fulfillment of decennial reaffirmation of accreditation. The current QEP for RU, prepared for the university's reaffirmation of accreditation in 2012, is the Scholar Citizen Initiative (SCI), which requires an ongoing assessment of its impact on the specified student learning outcomes and on overall goals. For more information about the Scholar Citizen Initiative goals and student learning outcomes, visit: http://www.radford.edu/content/qep/home/guide/outcomes.html

The SCI-QEP Impact Report is due to SACSCOC in March 2018 at which time the institution will have to demonstrate the extent to which the identified SCI goals and student learning outcomes are achieved, as well as the impact that SCI has had on student learning and/or the environment supporting student learning at RU.

Benefits of Conducting Assessment

Academic assessment programs at Radford University are designed to advance a culture of evidence and continuous improvement of student learning, of programs, and of services. The following are benefits that may accrue from conducting academic assessment (adapted from Ball State University, 2012):

1. Assessment enables clear communications about the value of an RU education by demonstrating the extent of our graduates' abilities and preparedness for further studies or for real-world work-life.
2. Assessment facilitates performance benchmarking that elicits our contributions to the value-added learning of our students.
3. Assessment helps to prioritize resources into activities that produce the outcomes we value as an institution.
4. Assessment leads to a culture of evidence whereby data are analyzed and used for making decisions leading to improved instruction, stronger curricula, and effective policies.
5. Assessment drives innovation and excellence by questioning the status quo to find better ways for doing things.
6. Assessment provides verifiable data for accreditation and funding agencies' requirements, as well as informs various accountability-driven conversations.
7. Assessment contributes to the scholarship of teaching and learning in the sense that assessment is at the intersection of student learning and pedagogy. It engages faculty in reflection as to what was taught and what students have learned.
8. Assessment allows us to demonstrate public accountability to institutional stakeholders, including students, parents, employers, policy makers, state and federal agencies.

Academic Program Assessment

What is 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 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." (Angelo, 1995, p. 7)

What Assessment is NOT?
- **Student grades**. Grades are not by themselves an assessment. Assessment looks at the alignment between the program curriculum and student learning outcomes. Grades may be used as assessment if they are directly linked to specific learning outcomes and data are collected for that purpose.
- **Evaluation**. Assessment is a process of improvement and should never be used to judge any faculty.
- **Just for accreditation**. Assessment should not be conducted just to meet accreditation requirements. To be meaningful it should be an ongoing process of development, measurement, and reflection geared toward continuous improvement.
- **Useless**. Assessment (if conducted properly) contributes to program development and to student learning.

Why Do We Conduct Assessment?
- Assessment is conducted to improve programs and student learning.
  - Helps to identify areas for improvement
  - Shows strengths of programs
  - Provides evidence of student learning attainment
  - Encourages a focus on curriculum rather than on courses
- Accountability
  - Assists the university and programs in meeting accreditation standards
  - Assists the university in meeting state mandates

What Units Should Develop Assessment Plans?
- Academic programs by degree level (i.e., Bachelor's Degree, Master's Degree, etc.)
- Interdisciplinary minors
- Post-baccalaureate programs
- Certificates
- Academic support units
- Administrative units

Roles in the Assessment Process

Faculty are key contributors to the assessment process and need to take ownership of the planning and the data collection needed to complete assessment reporting. SACSCOC Comprehensive Standard 3.4.10 states, "The institution places primary responsibility for the content, quality, and effectiveness of its curriculum with its faculty" (p. 29).

Academic Departments
Academic programs are responsible for carrying out assessment for their majors, interdisciplinary minors, certificates, and post-baccalaureate programs.

- Department Faculty – All faculty members (both full-time and part-time) should be involved in the assessment of programs. These duties include identifying outcomes, defining assessment measures and gathering data, analyzing and reviewing results, working as a team to determine appropriate action plans to make improvements, carrying out action plans, and annually reviewing the assessment process. It is important that discussion of assessment results becomes a common item in academic department meeting agendas.
- Department Assessment Coordinator - Each academic department has one person who is responsible for coordinating the assessment process for programs within the department and for informing the program of any changes in assessment policies and procedures. This person may be the department chair, program coordinator, or another designated member of the department. The Assessment Coordinator is responsible for leading the department in developing and implementing the assessment plan(s) for each of its programs. The coordinator ensures that student learning and program outcomes are assessed and appropriate action plans for improvement are developed and carried out by the department.

Academic Assessment Office
The Academic Assessment Office is responsible for overseeing the entire academic assessment process at Radford University and for ensuring that the process meets the SACSCOC requirements for institutional effectiveness. Specific duties include:

- maintaining electronic archives of all assessment reports;
- notifying academic and academic support units of changes in accreditation requirements related to assessment;
- administering university-wide assessment measures such as the Student Evaluation of Faculty Survey, the CIRP Freshmen Survey, and the CIRP College Senior Survey; and
- assisting academic and academic support units in the development of their assessment plans.

The Assessment Process

The assessment process involves examining student learning by tracking and measuring student performance. It is the process by which programs can demonstrate the extent to which desired outcomes are achieved. Assessment is an on-going cycle of identifying desired outcomes, measuring the achievement of these outcomes, analyzing the information collected, reporting results, and making improvements (as needed) to help students master the learning outcomes.

The following illustration depicts an on-going process of assessment in 5-steps.
   Step1: The program identifies or revises student learning outcomes.
   Step 2: The program identifies or revises the means by which the outcomes will be assessed.
   Step 3: The program collects data based on identified method.
   Step 4: The program analyzes the data.
   Step 5: The program makes plans or changes based on the findings for that learning
            outcome.

After completing the cycle of assessment, the program would start the process all over, beginning with identification or revision of the student learning outcomes intended to be measured during the upcoming year.

The Assessment Cycle
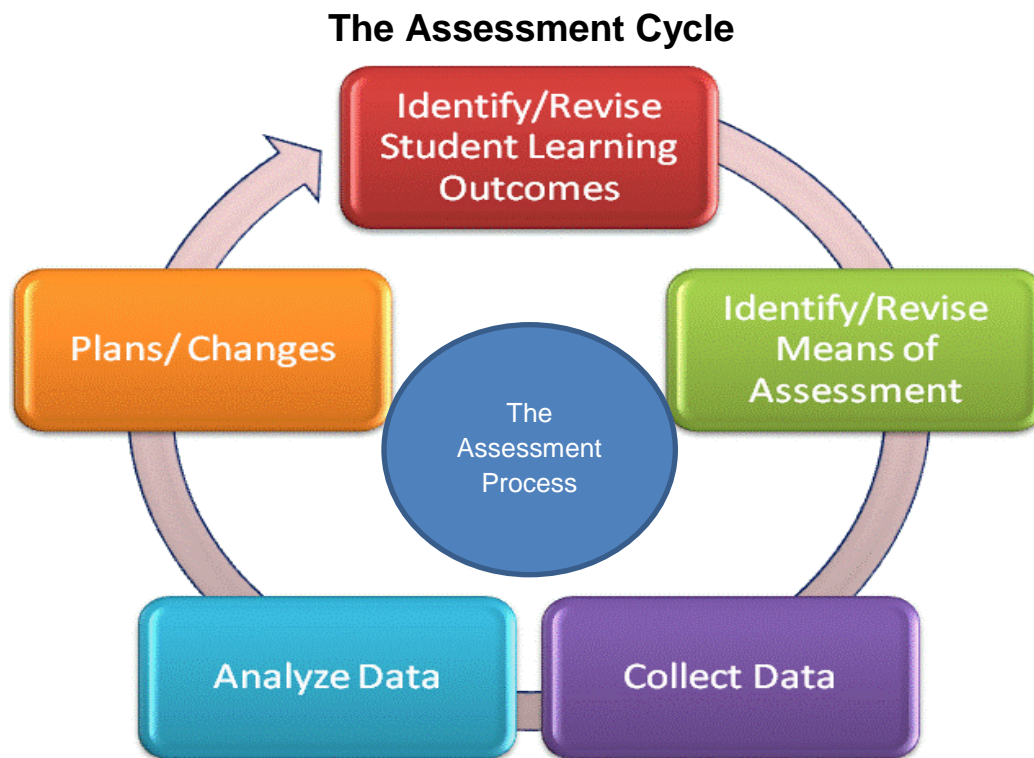
Adapted from: Assessment [Online image]. (n.d.). Retrieved from: http://www.sccollege.edu/
            StudentServices/slo/Pages/Assessment.aspx

Developing an Assessment Plan

The following section describes the steps to be followed in developing an assessment plan.

STEP 1: Mission Statement

The first step in developing an assessment plan for any academic program is to create a mission statement that reflects the purpose of the program. Having a mission statement is crucial because it guides the development of the assessment plan.

Everyone in the department and/or program should be clear about the mission and what the program is trying to accomplish. Mission statements should be revisited over time as curriculum changes and program directives change.

A good mission statement:
- states concisely the general values and principles which guide the program;
- defines the broad purposes the program is aiming to achieve;
- describes the community the program is designed to serve; and
- complements the College and University mission.

> **In developing a mission statement a program should ask:**
>
> - Does the mission statement align with the mission of the College and the University?
> - Does the mission statement clearly describe the purpose of the program?

Some examples of good mission statements are:

From The University of Colorado-Colorado Springs:
- "The mission of the Department of Biology is to provide excellent classroom teaching integrated with relevant research and practical experiences that will prepare students to be innovative and knowledgeable professionals in the biological sciences, as well as critical thinkers and engaged citizens" (http://www.uccs.edu/assess/academic-programs/missionvision-statement.html).

From California State University-San Bernardino:
- "The mission of the graduate program in English is to provide students with an understanding of how written and spoken texts work rhetorically and stylistically as well as how historical, cultural, and social conditions affect the ways in which speakers, writers, and readers construct meaning. With its firm grounding in theory and research as well as its emphasis on pedagogy, the M. A. in English Composition prepares students to excel both as writers and teachers of writing, literature, and English as a second language, particularly at the high school and community college levels. The program also provides students with a foundation for Ph.D. and M.F.A. degrees and prepares them to be effective technical and business writers" (http://english.csusb.edu/graduates/MA/current_students/missionStatement.html).

STEP 2: Program Goals

Goals (optional for departments but often useful for structuring outcomes)
Keeping the mission statement in mind, the next step in the assessment process is to develop program goals. Goals are broad statements based on what the academic program wants to accomplish as related to student learning and should assist the program in its planning efforts. Goal statements flow from the mission and can provide a framework for determining the outcomes of a program.

Goal statement examples:

From Western Washington University:
- "Our goal is to graduate Political Science majors with a firm grasp of the American political system and other political systems within the context of global forces, international conflicts, social movements, ideological systems, and cultural diversity" (https://chss.wwu.edu/political-science/mission-statement-goals-objectives-and-priorities)

From The University of Central Florida:
- "Train graduate students to do significant and independent research by offering core physics courses, specialty options, and advanced computational instruction as well as hands-on involvement in advanced research programs that familiarize students with state-of-the-art techniques and equipment." (http://physics.cos.ucf.edu/about/mission-statement/)

> **In developing its goals a program should ask:**
>
> - Do the goals capture the main purpose of the departmental mission?
> - How many goals would be needed to accurately summarize the program?
> - To what extent do the program goals reflect the disciplinary or professional needs?

Student Learning Outcomes

The next task for any program when developing an assessment plan is to identify student learning outcomes. Student learning outcomes are statements that specify what knowledge, skills, or abilities students should acquire by the time they complete their program of study. These outcomes should be ones that are critical to student success in the program and should distinguish a program from other programs. Programs could use these student learning outcomes to describe their graduates to others on- and off-campus.

> **In developing student learning outcomes the program should ask:**
>
> - What key knowledge, skills, or abilities are graduates of the program expected to have, know, or be able to do?
> - Are all faculty and students in the program aware of the student learning outcomes?

Student learning outcomes should be:
- specific, observable behaviors that students are expected to demonstrate;
- narrowly focused and measurable;
- attainable by students in the program;
- stated in such a way that the outcome can be measured by more than one assessment method;
- associated with one of the program's goal statements (if goal statements are used); and
- stated at an appropriate cognitive level for the degree program (bachelor's, master's, Ph.D.).

Examples of good action verbs to use in developing student learning outcomes can be found in Bloom's taxonomy (see Appendix E).

Examples of measurable, specific, observable student learning outcomes:

From Brigham Young University:
- "Identify major philosophical figures and texts, their historical context, their philosophical interrelations, and their importance." (https://learningoutcomes.byu.edu/#college=AsrV_-k2zdNk&department=x4Yl4y2qUutJ&program=j6xvj-BJ9gRW)

From The University of Rhode Island:
- "Describe and explain the major cellular processes in eukaryotes and prokaryotes." (http://cels.uri.edu/bio/BIO_ugrad.aspx)

- "Describe modern human biological diversity and articulate an informed position on the question of biological races of humans."
(http://www.uri.edu/artsci/soc/studentlearningoutcomes.html)

Program Outcomes

Program outcomes are statements highlighting program metrics that specify expected student achievement at the program level, such as retention and graduation rates, licensure and certification rates, and job placement rates.

Program outcomes should be:
- specific achievement objectives for the program;
- narrowly focused and measurable;
- associated with one of the program's goal statements (if goal statements are used); and
- derived from the program's mission.

> **In developing program outcomes the program should ask:**
>
> - What metrics are important for the program?
> - To what extent can the results of the outcomes be influenced, if need be?

Hypothetical examples of program outcomes:
- The department of civil engineering will increase graduation rates of its students.

- Students graduating with a BS degree in business management will state that they obtained a job in their chosen field within one year of graduation.

- Seniors majoring in criminal justice will successfully complete an internship at approved sites by the department.

STEP 4: Curriculum Mapping

Curriculum mapping is a technique that allows departments to align their courses and instruction with stated learning outcomes. This technique identifies where in the curriculum the defined student learning outcomes are being covered. This becomes a road map to how students will successfully satisfy the student learning outcomes identified by the program. Programs need to examine their curriculum and determine where students are learning the outcomes designed by the program and determine the best place to measure student achievement of the outcome. The curriculum map is used to show everyone in the program exactly where learning outcomes are taught and to make sure students have the opportunities in the curriculum to be exposed to these outcomes.

In developing a curriculum map the program should ask:

- What courses are required of students?
- In what sequence are these courses taken either by requirement or in general?
- Are all of the departmental learning outcomes covered in those required courses?
- If there are gaps, how would the department close those gaps (i.e., curriculum change or learning outcome changes)?

Curriculum mapping:
- exposes where there are gaps in curriculum that wouldn't enable students to meet the desired learning outcomes and
- assists in assessment planning by demonstrating where and when assessment can be effectively implemented.

Benefits:

From The University of Hawaii-Manoa:
- "improves communication among faculty,"
- "improves program coherence," and
- "increases the likelihood that students achieve program-level outcomes" (http://manoa.hawaii.edu/assessment/howto/mapping.htm)

Example of a curriculum map at the program level:

The following chart is an example of a curriculum map for a program. The first column represents the student learning outcomes of the program. Each of the subsequent columns represents a required course or academic experience in the program. In the first several rows, the X's depict where each of the learning outcomes is taught in the curriculum. The last row contains a more detailed example of how to identify the places in which the learning outcomes are being taught by indicating initially where the concept is first introduced to the students (I), then where it is reinforced (R), and where it will be assessed (A) based on the program's assessment plan.

Learning Outcome	Introductory Courses (100 / 200 level)			Upper Level Courses (300 /400 level)				Additional Required Academic Experience
	INTR 101	INTR 205	INTR 250	INTR 305	INTR 350	INTR 400	INTR 485	Internship (required)
Number One	X				X	X		
Number Two			X				X	
Number Three	X	X		X			X	X
Number Four		X				X	X	X
Instead of using X's, programs can use "I" for a concept that is introduced, "R" for a concept that is reinforced, and "A" for where assessment information is collected. See example below:								
Number Four		I				R	R, A	R

STEP 5: Developing an Assessment Cycle and Assessment Measure Mapping

It is important for programs to develop an assessment cycle and a measure map for the assessment process. These two procedures assist programs in keeping track of the "where" and "when" in the assessment process. The program should identify how often each of the learning outcomes should be assessed and who is responsible for conducting the assessment.

When the two processes of developing an assessment cycle and a curriculum map are utilized:

- programs can identify time frames and personnel needed to accomplish an assessment plan;
- programs can see where assessment can be streamlined (i.e., utilizing one course or project to effectively measure more than one learning outcome); and
- programs can make the assessment process more manageable.

> **In developing an assessment measure map and assessment cycle the program should ask:**
>
> - What student activities / experiences are needed to cover most of the learning outcomes?
> - Who would be responsible for collecting the assessment data?
> - Who would analyze the data or complete the reports?
> - How often would the outcomes be measured?

Examples:

- Assessment measure map: Programs can chart their measures to determine if one can cover several of the outcomes. This can also be a place where programs can give timelines and responsibilities.

  The following chart shows the different direct and indirect assessment methods that were chosen by a program and which programmatic learning outcomes would be measured by each method. Additionally, this example (in a few cells) shows how this type of chart can provide additional information about the implementation of the assessment plan, including who is responsible and where and when the assessment will be conducted. For example, in the category of written course assignments, the assessment would be done each semester in INTR305 course by the professor.

Learning Outcome	Departmental Direct Assessment Methods				Departmental Indirect Assessment Methods		
	Capstone Course Projects	Written Course Assignments	Course Project	Standardized Subject Matter Test	Student Focus Groups / Interviews	UG Exit Survey	NSSE
Number One	X	X (INTR305, Professor, Every semester)			X (Spring semester, Dept Chair)	X	
Number Two			X	X		X	X (Every Spring, Assessment Office)
Number Three	X						

- Assessment cycle map: Programs can create a document that identifies when assessments will take place (this can be adjusted if findings show the need for changes and reassessment). All outcomes should be assessed at least twice in a five-year time frame. Certain outcomes could be assessed every year if the program deems it fit. This plan can be updated every year as the need to alter the cycle arises.

  The chart below shows which student learning outcomes will be measured each year. As can be seen in the chart, outcome number one is scheduled to be measured each year whereas outcomes number four, five, and six are only scheduled to be measured in years two and four.

Learning Outcome	Year One	Year Two	Year Three	Year Four	Year Five
Number One	X	X	X	X	X
Number Two	X		X		X
Number Three	X		X (This assessment showed the program was not meeting its outcome.)	X (Program decided to assess in this year to see if action plan helped.)	X
Number Four		X		X	
Number Five		X		X	
Number Six		X		X	

STEP 6: Measures and Data Collection

Once expected outcomes are developed, methods that will be used to measure these outcomes must be determined. While the type of methods used will vary depending on the outcomes, all methods should demonstrate whether students have achieved the expected outcome.

Allen (2008) states that good measures are:
- valid (are directly related to the learning outcome being assessed);
- reliable;
- actionable (results show what students have learned and which outcomes may require some form of action);
- efficient and cost-effective in time and money;
- engaging to students and other respondents (students will be motivated to demonstrate their skills or knowledge);
- acceptable to faculty and other stakeholders (faculty will care about the results of the assessment and will be willing to make changes if necessary); and
- triangulated (multiple lines of evidence point to the same conclusion).

> **In developing measures the program should ask:**
>
> - Are there any measures / student activities already in place that could be used to assess the student learning outcomes?
> - Will these measures obtain the appropriate knowledge level of the outcome?
> - Are there multiple measures to examine the outcomes?

Direct Measures

A direct measure of a *learning outcome* allows one to directly observe the student performance, usually via student assignment or work embedded in the course. This is an actual measure of the extent to which the student achieved the desired outcome.

Examples of direct measures of student performance include: capstone projects, portfolios, commercially developed tests, local tests, case studies, student artifacts, written exams, essay questions, presentations or demonstrations, nationally normed testing, discipline-specific tests, external evaluation of exhibitions or performances, juried review of projects, etc.

Examples of appropriate direct measures for student learning outcomes:

From The University of Northern Iowa:
Student learning outcome: "Students will be able to classify regions and describe how regions are constructed and applied in geographic analysis."

Measure One: Essay question on Senior Exam scored with a rubric.

Measure Two: A portfolio evaluated by an assessment committee (using a standard rubric) prior to graduation.
(http://www.uni.edu/assessment/plans/csbs.shtml).

From University of Alabama-Birmingham:
Student learning outcome: "Students will identify and understand the major ethical foundations for the criminal justice system, its agencies, and personnel including the major tenets of such systems as Utilitarian, Ethical Formalism, Ethics of Care, and Religious Ethics."

Measure: Criminal Justice Major Field Test: Professional Ethics & Critical Thinking (http://www.uab.edu/institutionaleffectiveness/images/assessment/examples.pdf)

A direct measure of a *program outcome* allows for someone to obtain rates or statistics on expected student achievement. Examples include licensure exam scores, retention and graduation rates received from the Office of Institutional Research.

Indirect Measures

An indirect measure of a *learning outcome* asks students to reflect on their learning or abilities but does not provide a direct piece of evidence regarding the learning; instead it infers student knowledge. Indirect measures are often used to supplement direct measures of student learning and program outcomes. Some examples of indirect measures of student learning include surveys, exit interviews, employer satisfaction studies, course evaluations, and focus groups.

Indirect measures of *program outcomes* include information obtained from secondary sources or from student perceptions of achievement. Examples would include an alumni survey asking students about their job experiences or about satisfaction with their academic experience.

Using a combination of both the direct and indirect methods is recommended. However, a direct method for each of the learning outcomes is essential.

Guidelines for Choosing a Measure

An effective assessment plan makes sure that appropriate measures are selected for the intended student learning outcomes. Programs need to have cognitive alignment such that the chosen measures accurately reflect the defined level of the student ability listed in the

outcome (i.e., it is not appropriate to use multiple-choice items for a learning outcome asking students to compare and contrast two theories or concepts).

Evaluation of Data Collection Method

After selecting a data-collection method, this checklist can help programs confirm their decisions. A well-chosen method:

- provides specific answers to the assessment question being investigated;
- is feasible to carry out given program resources and amount of time faculty members are willing to invest in assessment activities;
- provides useful, meaningful information that can be used as a basis for decision-making;
- provides results that faculty members and intended users will believe are credible;
- provides results that are actionable (faculty members will be willing to discuss and make changes to the program, as needed, based on the results); and
- takes advantage of existing products (e.g., exams or surveys the faculty/program already use) whenever possible.

(Adapted from: http://manoa.hawaii.edu/assessment/howto/methods.htm)

STEP 7: Targets / Criteria for Success

Targets for learning or program outcomes are the desired performance level programs want to see from their majors and graduates.

Performance targets should be:
- specific (what the program plans to achieve is clear);
- measureable (there is a way to determine whether or not the target has been reached);
- achievable; and
- rigorous.

In developing targets a program should ask:

- What level of achievement is realistic for students?
- Does the target match the way program data was presented (i.e., both are % of students achieving a certain level)?
- How will it be determined that the expectations are met?

Examples of Targets for Student Learning Outcomes:

From Gaullaudet University:
- "All students are expected to achieve a Proficient level on at least four of the five categories of the Child Study Evaluation Rubric." (http://www.gallaudet.edu/office_of_academic_quality/assessment_of_student_learning_outcomes/instructions_and_examples/setting_performance_targets.html)

From University of Alabama-Birmingham:
- "Students will correctly answer 60% of MFT questions relating to ethics." (http://www.uab.edu/institutionaleffectiveness/images/assessment/examples.pdf)

Examples of Targets for Program Outcomes:

From University of Alabama-Birmingham:
- "50% of graduating students who apply will be accepted into graduate or professional schools within three years of graduating with a B.S in Biology." (http://www.uab.edu/institutionaleffectiveness/images/assessment/examples.pdf)

Hypothetical example:
- 90% of seniors majoring in criminal justice will successfully complete an internship at a department approved site.

STEP 8: Results or Findings

Results or findings are obtained by analyzing the data from a chosen measure and comparing it to the target to determine student performance.

Suskie (2009) describes several ways to summarize assessment results. These include:
- percentages (usually the preferred method);
- tallies or frequencies;
- averaging results into an overall score;
- averaging results into sub-scores; and
- qualitative summaries (grouped listings, themes, examples).

Results can also look at differences:
- between groups;
- over time; and
- with peers.

> **In presenting findings or results a program should ask:**
>
> - Are the findings reported in terms of the stated targets?
> - Do the numbers make sense in relation to the measure?

How findings should be written:
- The first step in analyzing results is to review the learning or program outcome. The analysis should include all aspects of the outcome. For example, if the outcome is for students to effectively communicate in both written and oral formats, the analysis should include separate findings for written and oral communication measures.
- The second step is to review the target statements for the outcome. If the target is that at least 75% of students will demonstrate proficiency on a particular skill, the findings should be reported as a percentage and not as an average or frequency.

Example of "results" for a student learning outcome:

From The University of Alabama-Birmingham:
Student learning outcome: "Students will identify and understand the major ethical foundations for the criminal justice system, its agencies, and personnel including the major tenets of such systems as Utilitarian, Ethical Formalism, Ethics of Care, and Religious Ethics."

Measure: Criminal Justice Major Field Test: Professional Ethics & Critical Thinking

Target: "Student will correctly answer 60% of MFT questions relating to ethics."

Results: "Students (n=73) taking the MFT scored an average of 64% correct on questions relating to ethics/critical thinking."
(http://www.uab.edu/institutionaleffectiveness/images/assessment/examples.pdf)

STEP 9: Feedback and Action Plans

This section of the assessment plan includes the program's interpretation of the assessment findings and consideration of future plans to embark upon. Action plans can consist of changes to pedagogy, changes to curriculum or programming, and changes to the allocation of resources. Action plans can also include changes in the assessment process as demonstrated in the example below. It is important to be as specific as possible when describing these plans.

Examples of feedback and action plans:

From The University of Alabama-Birmingham:
> Student learning outcome: "Students will identify and understand the major ethical foundations for the criminal justice system, its agencies, and personnel including the major tenets of such systems as Utilitarian, Ethical Formalism, Ethics of Care, and Religious Ethics."
>
> Measure: Criminal Justice Major Field Test: Professional Ethics & Critical Thinking
>
> Target: "Student will correctly answer 60% of MFT questions relating to ethics."

> **In developing action plans a program should ask:**
>
> - What actions are necessary from the results?
> - What changes will be needed?
> - Are additional resources needed to implement the action plan(s)?
> - Are faculty involved in the interpretation of the data?

> Results: "Students (n=73) taking the MFT scored an average of 64% correct on questions relating to ethics/critical thinking."
>
> Feedback and Action Plans: "During 2011-2012, faculty members did a better job of integrating ethics/critical thinking into core required courses via exercises, discussion groups, etc. Given that the goal of 60% correct answers for this subarea of the MFT has been met, the goal will now be changed to 70% correct answers (on average) beginning in 2012-2013."
> (http://www.uab.edu/institutionaleffectiveness/images/assessment/examples.pdf)

Other examples of feedback and action plans:

From King (2012):
- "Increase the quality of distance learning instruction at SFA by training faculty to increase their expertise in the use of instructional technology for distance learning."

(http://assessment.tamu.edu/resources/conf_2012_presentations/King_Why_Aren%27t_We_Closing_The_Loop.pdf)

From the University of Colorado-Boulder:
- "Senior Mathematics majors' performance in the modern algebra subarea of the ETS Major Field Achievement Test (MFAT) was good but weaker than their performance in other subareas. In addition, the MFAT's questions suggested that mathematics majors at other institutions were studying more modern algebra than the CU-Boulder program required. The faculty have added a required upper-division modern algebra course." (http://www.colorado.edu/pba/outcomes/ovview/lchange.htm)

"Closing the Loop" encompasses analyzing the results of action plans by re-assessing outcomes to determine the effect those action plans had on student learning. Because closing the loop is an evaluation of an action plan once it's implemented, this section of the assessment report cannot be completed until the next assessment cycle.

Adapted from Linda Neavel Dickens (2011) at the University of Texas-Austin, there are three ways a program can close the loop in assessment:

1. Assessment results can be used to show that the program has achieved an academic or program outcome target. To close the loop for this outcome a program will:
    a. collect data;
    b. report results showing that the criteria of achieving the outcome is met; and
    c. continue to measure in future cycles and revise target.

> **In closing the loop a program should ask:**
>
> - What impact has the action plan had on student learning?
> - If there has been no improvement in learning, does the action plan need more time to be effective?
> - If there has been no improvement in learning, should a new action plan be implemented?

2. If the outcome's target has not been met, the program develops an action plan to address the deficiency. The impact of the action plan is then evaluated by reassessing the outcome. If the action plan still does not help the program achieve the outcome, then further action for improvements is made. To close the loop a program will:
    a. collect data;
    b. report results showing that the criteria for achieving the outcome is not met;
    c. identify an action plan to address the unmet target;
    d. implement the action plan;
    e. collect data on the impact of the action plan; and
    f. report results.

3. The program decides that the assessment plan needs revision to better reflect the program (including changes to an outcome, assessment measure, or target) and documents those revisions. To close the loop the program:
    a. collects data;
    b. reports results; and
    c. documents the changes to be made to the assessment plan.
    (http://www.utexas.edu/provost/planning/assessment/iapa/resources/pdfs/Handbook%0for%20IE.pdf)

Examples:

From the University of Southern Mississippi:
> "The faculty has been working on a number of plans to improve student learning generally, including encouraging legal research assignments in most paralegal classes, reassessing the legal research exit exam, and encouraging students to enroll in the paralegal internship course. The faculty has also been working on student recruitment of high school and community college transfer students. The paralegal program has continued to emphasize legal research assignments in most paralegal classes. This emphasis has obviously worked as one of the strengths of the paralegal program is the students' ability to compose legal documents, specifically legal memorandums. Indeed, our students have steadily improved with 100% of Hattiesburg and Gulf Coast students for 2009-2010 and 2010-2011 who turned in a legal memorandum receiving a score of 70 or better on the grading rubric (up from 83% in 2008-2009 for Hattiesburg students)."
> (http://www.usm.edu/sites/default/files/groups/institutional-effectiveness/pdf/closing_the_loop_showcase_booklet_2012_4.23.12.pdf)

From Northern Virginia Community College:
> The Business program at Northern Virginia Community College found that students performed below target on measures of their ability to document sources. As an action plan the program added this skill to their curriculum in the BUS136 and BUS137 courses. Following implementation of this strategy the Business program saw an increase in performance from 52.8% meeting the target in 2010 to 80% meeting the target in 2012.
> (http://www.nvcc.edu/about-nova/directories--offices/administrative-offices/assessment/resources/docs/Example4.pdf)

From California State University-Fresno:
> Based on an employer survey, results showed that teacher candidates in the Special Education program were unprepared to conduct student achievement evaluations and to analyze the results of these evaluations. The faculty of the department met and decided to address the problem by adding a new course and integrating evaluation techniques into existing courses. Following the implementation of this action plan they found that candidate performance improved from 50% to 84% of employers stating that they were prepared on this skill.
> (http://www.fresnostate.edu/academics/oie/documents/assesments/lessons/vignette%20-may%202011.pdf)

Developing an Effective Assessment Program

For assessment to be truly effective, departments need to engage both faculty and students in the process. Faculty need to have a collective ownership of the entire program by focusing on the curriculum rather than on courses. Students need to be informed on what the program is trying to accomplish. And, programs need to come up with a way to make the process more effective. (see Appendix G for the Nine Principles of Good Practice for Assessing Student Learning.)

Some tips include:
- Making the assessment process more manageable. Come up with timelines and protocols for implementation.
- Sharing the results at faculty meetings. Get assessment on the agenda. Have group discussions on what the data has shown and how the program can make changes to assist student learning.
- Acting on the assessment. Use the data the program already has. Don't file it away.
- Utilizing what is already being done in the programs. Streamline assessments by examining what learning activities are already in place and see how these can fit into the assessment planning process.
- Treating assessment as a living, dynamic document. Learning outcomes might change and curriculum might change. This should be seen as an improvement process.

> **To develop an effective assessment report a program should ask:**
>
> - How is the program sharing the assessment results with the faculty?
> - How is the program using the assessment results to make improvements in student learning?

How do departments develop an effective assessment program? Program assessment is effective when:
- Assessment is viewed as a comprehensive, systematic, and continuous process;
- Assessment is viewed as a means for self-improvement;
- Assessment measures are meaningful;
- Assessment utilizes multiple measures and multiple sources;
- Assessment is used as a management tool;
- Assessment results are valued and are genuinely used to improve programs and processes;
- Assessment is coordinated by one person and reviewed by a committee (note that this is "coordinated," not "done");
- Assessment involves the participation and input of all faculty and staff; and
- Assessment includes students.
  (University of Central Florida, 2008, p. 4)

Appendices

Appendix A : Procedures for Core Curriculum Assessment

Background

The current Core Curriculum for Radford University started in Fall 2009, including 43-45 credit hours, and is composed of University Core and College Core. Students are required to take a four-course series to complete the University Core A requirements. These courses make up a common, interdisciplinary experience for all students at Radford and focus on written communication, oral communication, critical thinking, and information literacy. In University Core B students choose one course in each of the following areas: mathematical science, natural sciences, humanities, visual and performing arts, and social and behavioral sciences.

The College Core area requires students to take a course in U.S. Perspectives and Global Perspectives and additional courses of their, or their programs', choosing in math or natural sciences, humanities, visual and performing arts or foreign language, and social and behavioral sciences or health and wellness.

Core Curriculum Advisory Committee

The Core Curriculum Advisory Committee (CCAC) oversees the Core Curriculum at Radford University. The committee reviews proposals and votes on the inclusion of courses in the Core Curriculum. The committee also works on the assessment of the Core and recommends changes or modifications based on assessment results. The committee is composed of various university personnel, including faculty representatives from each of the colleges (1 from CEHD, 3 from CHBS, 2 from CSAT, 1 from COBE, 1 from Waldron, 1 from CVPA), the Core Director (non-voting), the Director of Academic Assessment (non-voting) and a representative for the Core Instructors (non-voting).

Core Assessment Planning and Progress

The Core Curriculum at Radford University has been assessed during the past three academic years. Findings were shared with CCAC and several changes were made:

- The CORE A outcomes and assignments were revised during the 2012-13 academic year and effected in Fall 2013.
- The learning outcomes in CORE areas 5-11 were revised in Spring 2014 and will become effective in Fall 2014.
- CCAC revised the assessment process and submitted a new assessment plan to the Faculty Senate to be voted on in Fall 2014.

For more information on the Core Curriculum, its learning outcomes, and the assessment plan please see: http://www.radford.edu/content/core-curriculum/home.html. (Updates on the process will be made in Fall 2014 semester.)

Appendix B: Glossary of Assessment Terms

- **Action Plan –** "A process which will help you to focus your ideas and to decide what steps you need to take to achieve particular goals that you may have. It is a statement of what you want to achieve over a given period of time."
(http://www.kent.ac.uk/careers/sk/skillsactionplanning.htm)

- **Assessment – "**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 gather, 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" (Angelo, 1995, p. 7).

- **Authentic Assessment –** A "form of assessment in which students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills" (Mueller, n.d.). "Assesses the student's ability to effectively and efficiently use a repertoire of knowledge and skills to negotiate a complex task" (Wiggins, 1990).

- **Bloom's Taxonomy –** "In 1956, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning."
(http://ww2.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm)

- **Closing the Loop –** "Encompasses analyzing results from outcome assessments, using results to make changes to improve student learning, and re-assessing outcomes in order to determine the effect those changes had on student learning."
(http://www.nvcc.edu/about-nova/directories--offices/administrative-offices/assessment/loop/step5/index.html)

- **Curriculum Mapping – "**The process of indexing or diagramming a curriculum to identify and address academic gaps, redundancies, and misalignments for purposes of improving the overall coherence of a course of study and, by extension, its effectiveness (a curriculum, in the sense that the term is typically used by educators, encompasses everything that teachers teach to students in a school or course, including the instructional materials and techniques they use)."
(http://edglossary.org/curriculum-mapping/)

- **Direct Measures –** "These are assessment measures in which the products of student work are evaluated in light of the learning outcomes for the program. Evidence from coursework, such as projects or specialized tests of knowledge or skill, are examples of direct measures. In all cases, direct measures involve the evaluation of demonstrations of student learning."
(https://www.uwsp.edu/acadaff/Appendix%20D/Assessment%20Academy%20Session%202%20DirectMeasures.pdf)

- **Embedded Assessment –** "A means of gathering information about student learning that is built into and is a natural part of the teaching-learning process."
(http://assessment.uconn.edu/docs/resources/Andrea_Leskes_Assessment_Glossary.pdf)

- **Findings –** "Once data has been collected and scored, the results can be used for decision-making, strategic planning, program evaluation, and program improvement."
(http://www.niu.edu/assessment/manual/overview.shtml)

- **Grades vs. Assessment –** *Difference between Grading and Assessment:* Grade Book Analogy (Nichols, as cited in Pickering & Paredes, n.d.):

Imagine what one would see in a paper grade book:

Student	*Written Paper*	*Midterm*	*Attendance*	*Final*	*Grade*
#1					
#2					
In this example, each row represents an individual student's performance and their final. Across the top are the graded activities that take place as part of the course.					

Next, take this concept and see how it looks from an assessment viewpoint:

Student	Written Paper			Midterm				Attend-ance	Final			Grade
	LO#1	LO#2	LO #3	LO#1	LO #4	LO #6	LO#7		LO# 4	LO# 7	LO# 6	
#1												
#2												
In this example, each column represents a score on a learning outcome. To understand how well students are doing overall on each outcome one would look at the scores for each learning outcome down the column.												

- **Indirect Measure –** "Gathers reflection about the learning or secondary evidence of its existence. Example: a student survey about whether a course or program helped develop a greater sensitivity to issues of diversity."
  (http://assessment.uconn.edu/docs/resources/Andrea_Leskes_Assessment_Glossary.pdf)

- **Institutional Effectiveness –** "Institutional effectiveness is the systematic, explicit, and documented process of measuring performance against mission in all aspects of an institution" (Southern Association of Colleges and Schools Commission on Colleges, 2012).

- **Portfolio Assessment –** "A collection of works that are associated with standards you are required to learn. This collection of work is often gathered over a long period of time to reflect what you have been taught as well as what you have learned. Each piece in the portfolio is required to be an authentic reflection of what you have learned and is meant to reflect your current knowledge and skills. A portfolio can include written reflection, artistic pieces, photographs, and a variety of other media all reflecting the concepts you have been learning."
  (http://teaching.about.com/od/gloss/g/Portfolio-Assessment.htm)

- **Program Assessment Plan –** A program assessment plan is a program's planning document for conducting the assessment of its student learning and its programmatic outcomes.

- **Program Mission –** From The University of Connecticut's (n.d.) document on how to write a mission statement:
  - "The Program Mission Statement is a concise statement of the general values and principles which guide the curriculum. It sets a tone and a philosophical position from which follow a program's goals and objectives. The Program Mission Statement should define the broad purposes the program is aiming to achieve, describe the community the program is designed to serve, and state the values and guiding principles which define its standards."
  - "Program Mission Statements must also be consistent with the principles of purpose set forth in the University's mission and goals statements. Accrediting bodies expect that Program Mission Statements are in harmony with mission statements of the institution, school / college, and /or department. Therefore, a good starting point for any program mission statement is to consider how the program mission supports or complements the University, school / college, and department missions and strategic goals."
  (http://assessment.uconn.edu/docs/HowToWriteMission.pdf)

- **Program Outcomes –** "Address important program metrics over and above student learning. They may include student retention or graduation rates, student placement after graduation, etc."
  (http://avillage.web.virginia.edu/iaas/assess/process/plan.shtm)

- **Qualitative Assessment –** "A way of gathering information that yield results that can't easily be measured by or translated into numbers. They are often used when you need the subtleties behind the numbers, the feelings, small actions, or pieces of community history that affect the current situation. They acknowledge the fact that experience is subjective – that it is filtered through the perceptions and world views of the people undergoing it - and that it's important to understand those perceptions and world views of the people undergoing it - and it's important to understand those perceptions and world views."
  (http://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/qualitative-methods/main)

- **Quantitative Assessment –** "Collects data that can be analyzed using quantitative methods. Includes methods that rely on numerical scores or ratings. A quantitative measurement uses values from an instrument based on a standardized system that intentionally limits data collection to a selected or predetermined set of possible responses. Quantitative assessment approaches work by the numbers, collecting, analyzing, interpreting, and charting results, trends, and norms."
  http://its.fvtc.edu/langan/SCO/SCO0607/SCO0607/index.htm

- **Rubric –** "A rubric is an explicit set of criteria used for assessing a particular type of work or performance (TLT Group, n.d.) and provides more details than a single grade or mark. Rubrics, therefore, will help you grade more objectively."
  (http://www.niu.edu/facdev/resources/guide/assessment/rubrics_for_assessment.pdf)

- **Student Learning Outcomes –** "…are the knowledge, skills, attitudes, and habits of mind that students take with them from a learning experience." (Suskie, 2009)
  (http://sa-assessment.uoregon.edu/ResourcesandTraining/WritingStudentLearningOutcomes.aspx)

- **Target –** "The desired level of performance you want to see, as measured by indicators, that represents success at achieving your outcome."
  (http://www.gallaudet.edu/office_of_academic_quality/assessment_of_student_learning_outcomes/instructions_and_examples/setting_performance_targets.html)

- **Triangulation –** "Facilitates validation of data through cross-verification from more than two sources. It tests the consistency of findings obtained through different instruments and increases the chance to control, or at least assess, some of the threats or multiple causes influencing our results."
  (http://betterevaluation.org/evaluation-options/triangulation)

- **Value Added –** "A new way of analyzing test data that can measure teaching and learning. Based on a review of students' test score gains from previous grades, researchers can predict the amount of growth those students are likely to make in a given year. Thus, value-added assessment can show whether particular students – those taking a certain Algebra class, say – have made the expected amount of progress, have made less progress than expected, or have been stretched beyond what they could reasonably be expected to achieve. Using the same methods, one can look back over several years to measure the long-term impact that a particular teacher or school had on student achievements."
  (http://www.cgp.upenn.edu/ope_value.html)

Appendix C: SACSCOC Principles Related to Academic Assessment
(Southern Association of Colleges and Schools Commission on Colleges, 2012)

SACSCOC Principles Related to Institutional Effectiveness
2.5 - The institution engages in ongoing, integrated, and institution-wide research-based planning and evaluation processes that (1) incorporate a systematic review of institutional mission, goals, and outcomes; (2) result in continuing improvement in institutional quality; and (3) demonstrate the institution is effectively accomplishing its mission. (Institutional Effectiveness) (p. 18)

3.3.1 - The institution identifies expected outcomes, assesses the extent to which it achieves these outcomes, and provides evidence of improvement based on analysis of the results in each of the following areas: (Institutional Effectiveness)
- 3.3.1.1 educational programs, to include student learning outcomes
- 3.3.1.2 administrative support services
- 3.3.1.3 academic and student support services
- 3.3.1.4 research within its mission, if appropriate
- 3.3.1.5 community/public service within its mission, if appropriate (p. 27)

3.5.1 - The institution identifies college-level general education competencies and the extent to which students have attained them. (General education competencies) (p. 29)

4.1 - The institution evaluates success with respect to student achievement consistent with its mission. Criteria may include: enrollment data; retention, graduation, course completion, and job placement rates; state licensing examinations; student portfolios; or other means of demonstrating achievement of goals. (Student achievement) (p. 39)

SACSCOC Principles Related to the Quality Enhancement Plan
2.12 - The institution has developed an acceptable Quality Enhancement Plan (QEP) that includes an institutional process for identifying key issues emerging from institutional assessment and focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution. (Quality Enhancement Plan) (p. 21)

3.3.2 - The institution has developed a Quality Enhancement Plan that (1) demonstrates institutional capability for the initiation, implementation, and completion of the QEP; (2) includes broad-based involvement of institutional constituencies in the development and proposed implementation of the QEP; and (3) identifies goals and a plan to assess their achievement. (Quality Enhancement Plan) (p. 27)

Appendix D: Examples of Different Measures

Embedded Assessment (Missouri State University-West Plains) – Course-embedded assessment is the practice of using works produced by students in courses to assess student learning outcomes. Various assignments such as quizzes, research papers, and exam questions may be used as measures as long as there is a direct link between the assignment and specific learning outcomes.

The Missouri State University-West Plains website discusses the advantages and disadvantages of using this form of assessment and provides several examples of possible embedded assessment assignments:
http://wp.missouristate.edu/assessment/3123.htm

Case Studies – One type of measurement technique that helps capture students' ability to translate theoretical concepts into practical application is a case study. This technique is a particularly helpful assessment tool when used in conjunction with scoring rubrics. The following websites contain helpful information and examples of case study assessment:
http://ar.cetl.hku.hk/am_case_study.htm
http://teaching.unsw.edu.au/assessment-case-studies-and-scenarios

Portfolios (University of Hawaii-Manoa) - A portfolio is a "collection of student work that represents student activities, accomplishments, and achievements over a period of time." Portfolios may contain various types of works such as research papers, presentations, journal entries, video and audio recordings and do not necessarily need to be limited to classroom assignments.

"There are two main types of portfolios:
Showcase Portfolios: Students select and submit their best work. The showcase portfolio emphasizes the products of learning.

Developmental Portfolios: Students select and submit pieces of work that can show evidence of growth or change over time. The growth portfolio emphasizes the process of learning."

The Assessment website from the University of Hawaii – Manoa contains many resources to assist academic departments and individual instructors in incorporating portfolios into their assessment practices:
http://manoa.hawaii.edu/assessment/howto/portfolios.htm

Reflections (the University of Michigan and the University of Iowa) – The University of Michigan website describes reflection as "an act of looking back in order to process experiences." Basically, this is a learning process in which a student thinks about their own

thinking. According to Linda Suskie (2009), this type of exercise can promote deep and lasting learning. The University of Michigan's Sweetland Center for Writing has created an extensive resource that can assist instructors on how to incorporate reflective exercises into the classroom:
http://www.lsa.umich.edu/UMICH/sweetland/Home/Instructors/Teaching%20Resources/Metacognition.pdf

The University of Iowa has also developed a guide for using reflection as an assessment tool:
http://vp.studentlife.uiowa.edu/assets/Using-Reflection-for-Assessment.pdf

Rubrics (University of Virginia) – Rubrics are common assessment instruments used by instructors at all levels of education. A rubric lists a set of criteria that defines the different expectations of an assignment in gradations from poor to excellent. This lends to a more consistent scoring by different reviewers. As a form of authentic assessment, rubrics are designed around expected student learning outcomes and allow programs to evaluate how well students have attained the knowledge and skills described in the outcome.

The University of Virginia's Office of Institutional Assessment and Studies (IAS) website describes the steps for developing and using rubrics for assessment. Sample rubrics that can be used as a model when creating new rubric measures can also be found:
http://web.virginia.edu/iaas/assess/tools/rubrics.shtm

Surveys to Measure Graduate Achievement (Lehigh University) – Many institutions of higher education gather information on graduate achievement, such as job placement and graduate-school acceptance rates, through alumni surveys. Lehigh University uses alumni surveys to gather information on both job placement and graduate/professional school acceptance:
http://www4.lehigh.edu/admissions/undergrad/success/placement.aspx

The University of Texas provides a useful site on how to develop a questionnaire survey:
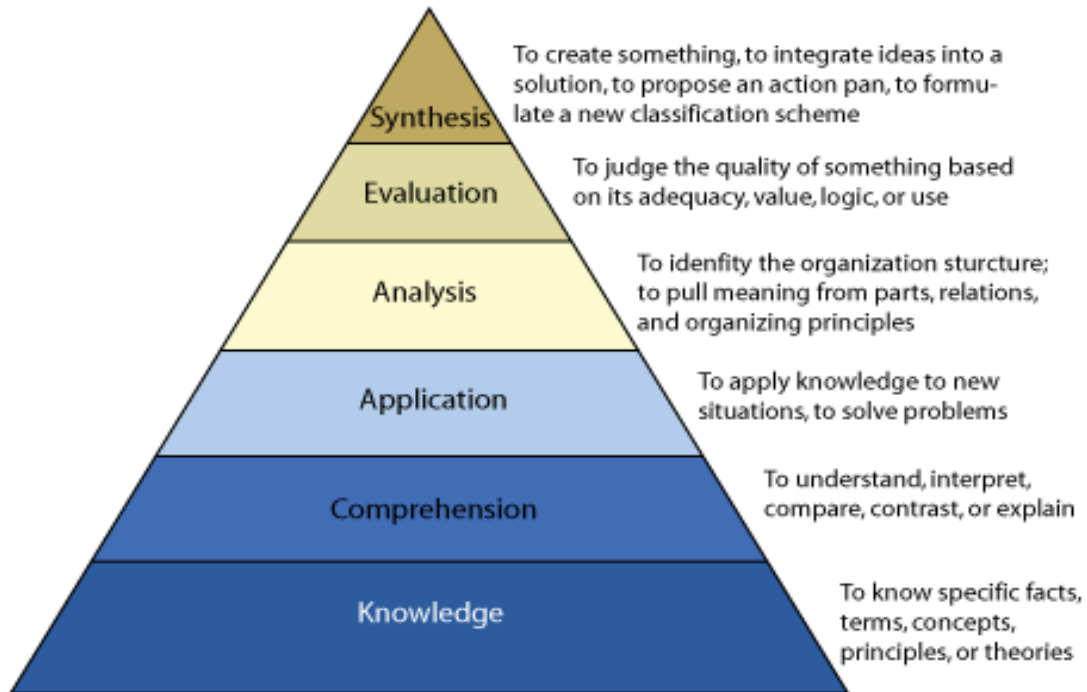https://www.utexas.edu/academic/ctl/assessment/iar/teaching/plan/method/survey/writing.php

Surveys to Measure Student Learning (Carnegie Mellon University) – An indirect method of gathering information on student learning is to ask students to assess their own level of knowledge or skills via a survey. Surveys designed for this purpose are not used to evaluate individual students, but instead are used to gauge the range and abilities of students as a whole.

Carnegie Mellon University provides useful information on how to use self-assessment instruments to gather indirect information on student learning:
http://www.cmu.edu/teaching/assessment/howto/basics/selfassessment.html

Appendix E: Bloom's Taxonomy

Learning outcomes can be classified using Bloom's Taxonomy (below), which categorizes student performance into six cognitive levels, organized from basic ("Knowledge") to complex ("Synthesis"). Faculty can match active verbs to each cognitive level as they write their student learning outcomes.

Synthesis — To create something, to integrate ideas into a solution, to propose an action pan, to formulate a new classification scheme

Evaluation — To judge the quality of something based on its adequacy, value, logic, or use

Analysis — To idenfity the organization sturcture; to pull meaning from parts, relations, and organizing principles

Application — To apply knowledge to new situations, to solve problems

Comprehension — To understand, interpret, compare, contrast, or explain

Knowledge — To know specific facts, terms, concepts, principles, or theories

From Institutional Assessment and Studies at the University of Virginia:
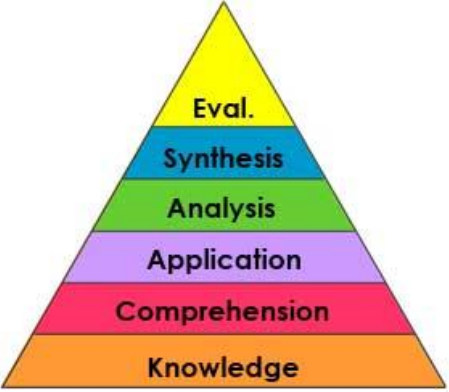http://avillage.web.virginia.edu/iaas/assess/process/plan.shtm

Bloom's Taxonomy of Cognitive Skills with Action Verb List

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Count	Associate	Add	Analyze	Categorize	Appraise
Define	Compute	Apply	Arrange	Combine	Assess
Describe	Convert	Calculate	Breakdown	Compile	Compare
Draw	Defend	Change	Combine	Compose	Conclude
Identify	Discuss	Classify	Design	Create	Contrast
Labels	Distinguish	Complete	Detect	Drive	Criticize
List	Estimate	Compute	Develop	Design	Critique
Match	Explain	Demonstrate	Diagram	Devise	Determine
Name	Extend	Discover	Differentiate	Explain	Grade
Outlines	Extrapolate	Divide	Discriminate	Generate	Interpret
Point	Generalize	Examine	Illustrate	Group	Judge
Quote	Give examples	Graph	Infer	Integrate	Justify
Read	Infer	Interpolate	Outline	Modify	Measure
Recall	Paraphrase	Manipulate	Point out	Order	Rank
Recite	Predict	Modify	Relate Select	Organize	Rate
Recognize	Rewrite	Operate	Separate	Plan	Support
Record	Summarize	Prepare	Subdivide	Prescribe	Test
Repeat		Produce	Utilize	Propose	
Reproduces		Show		Rearrange	
Selects		Solve		Reconstruct	
State		Subtract		Related	
Write		Translate		Reorganize	
		Use		Revise	
				Rewrite	
				Summarize	
				Transform	
				Specify	

Source/Reference: These steps were derived from information collected at various conferences by Dr. Cia Verschelden; the original source is unknown. This information was originally posted on the Office of Assessment web site (www.k-state.edu/assessment) in the summer of 2003.

From: http://avillage.web.virginia.edu/iaas/assess/resources/Verb-list.pdf

Bloom's Taxonomy

In 1956, Benjamin Bloom headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning. During the 1990's a new group of cognitive psychologists, lead by Lorin Anderson (a former student of Bloom), updated the taxonomy to reflect relevance to 21st century work. The two graphics show the revised and original Taxonomy. Note the change from nouns to verbs associated with each level.

Note that the top two levels are essentially exchanged from the traditional to the new version.

New Version

Old Version

Remembering: can the student recall or remember the information?	define, duplicate, list, memorize, recall, repeat, reproduce state
Understanding: can the student explain ideas or concepts?	classify, describe, discuss, explain, identify, locate, recognize, report, select, translate, paraphrase
Applying: can the student use the information in a new way?	choose, demonstrate, dramatize, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write.
Analyzing: can the student distinguish between the different parts?	appraise, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, test.
Evaluating: can the student justify a stand or decision?	appraise, argue, defend, judge, select, support, value, evaluate
Creating: can the student create new product or point of view?	assemble, construct, create, design, develop, formulate, write.

From: http://ww2.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm

Appendix F: Resources

Topic Areas	Resource Location
Mission Statements	
Writing a program mission statement	• http://assessment.uconn.edu/docs/HowToWriteMission.pdf • http://www.uccs.edu/assess/academic-programs/missionvision-statement.html#To_Begin_to_Build_a_Mission_Statement
Mission statements, outcomes, and curriculum mapping	• http://avillage.web.virginia.edu/iaas/assess/process/plan.shtm • http://manoa.hawaii.edu/assessment/howto/mapping.htm • http://uwf.edu/offices/cutla/supporting-pages/curriculum-maps-guidelines/
Student Learning Outcomes	
Resource for a comprehensive view on learning outcomes	• http://www.nwlink.com/~donclark/hrd/bloom.html.
Writing outcomes	• http://assessment.uconn.edu/docs/HowToWriteObjectivesOutcomes.pdf • http://assessment.tamu.edu/resources/writing_student_learning_outcomes.html
Writing measurable learning outcomes	• http://sss.dcu.ie/afi/docs/bologna/writing_and_using_learning_outcomes.pdf. • http://teachonline.asu.edu/2012/07/writing-measurable-learning-objectives/ • http://www.canadacollege.edu/inside/research/slos/documents/STUDENT%20SERVICES%20SLO%20GUIDE%20BOOK.pdf • http://www.mnsu.edu/assessment/resources/measurable_outcomes.html
Expected learning outcomes	• https://learningoutcomes.byu.edu • http://www.learningoutcomeassessment.org/TFComponentSLOS.htm • https://www.tltc.ttu.edu/content/asp/assessment/pages/pg04.pdf • https://asccas.osu.edu/curriculum/ge-goals-and-learning-outcomes
Learning outcome assessment	• http://www.learningoutcomeassessment.org/TFComponentSLOS.htm • http://learningoutcomesassessment.org/websiteoverview.html • http://web.uri.edu/assessment/
Cognitive verbs for student learning outcome statements	• http://tenntlc-utk-edu.wpengine.netdna-cdn.com/files/2011/03/Blooms-Verbs.pdf • http://www.library.illinois.edu/infolit/learningoutcomes.html • http://www.sc.edu/cte/learningoutcomes/ • http://assessment.uconn.edu/docs/HowToWriteObjectivesOutcomes.pdf

Assessment Methods	
Authentic Assessment	• www.park.edu/cetl/quicktips/authassess.thm • http://jfmueller.faculty.noctrl.edu/toolbox/examples/authentictaskexamples.htm • http://www.eduplace.com/rdg/res/litass/auth.html • http://oregonstate.edu/instruction/ed555/zone5/zone5hom.htm
Direct and indirect assessment methods including internal and external (standardized) instruments, electronic assessment tools	• http://www.ncte.org/library/NCTEFiles/Resources/Positions/WPAwritingassessment.pdf • http://assessment.tamu.edu/resources/methods.html • https://www.wcupa.edu/tlac/documents/More%20on%20Measures--Definitions.pdf • https://www.csuohio.edu/offices/assessment/exmeasures.html
Measuring quality in higher education: An inventory of instruments, tools, and resources	• http://apps.airweb.org/surveys/ • https://aacu.org/liberaleducation/le-sp01/le-sp01bennett2.cfm • http://www.learningoutcomeassessment.org/measuringquality.html
Curriculum Mapping	
Curriculum mapping resource	• http://manoa.hawaii.edu/assessment/howto/mapping.htm • http://www.learningoutcomeassessment.org/mapping.htm • http://www.sfu.ca/tlc/development/curriculumplanning/mapping.html
Curriculum mapping	• http://www.learningoutcomeassessment.org/mapping.htm
Use of program alignment mapping technique	• http://uwf.edu/cutla/documents/Sample-Curriculum-Map-%28Assignments-Embedded-Assessments%29.pdf • http://www.researchgate.net/publication/233284950_Rethinking_Program_Assessment_through_the_Use_of_Program_Alignment_Mapping_Technique
Curriculum map example	• Florida International Bachelor in Nursing (http://apa.fiu.edu/handbook_chapter5.html) • University of West Florida (http://uwf.edu/cutla/)

Other Areas: Authentic Assessment, Rubrics, Etc.	
Assessment in practice	• http://gallery.carnegiefoundation.org
Three promising alternatives for assessing college students' knowledge and skills	• http://www.learningoutcomeassessment.org/occasionalpapertwo.htm http://secure2.aacu.org/store/detail.aspx?id=ASSESSCSL
National Institute for Learning Outcomes Assessment	• http://www.learningoutcomeassessment.org/Portfolio.htm • http://www.learningoutcomeassessment.org/
Sample rubrics	• http://course1.winona.edu/shatfield/air/rubrics.htm
Authentic assessment toolbox	• http://jfmueller.faculty.noctrl.edu/toolbox/index.htm • http://jfmueller.faculty.noctrl.edu/toolbox/ • http://jolt.merlot.org/documents/vol1_no1_mueller_001.pdf
Proposes ways to plan for and conduct authentic assessment, and includes a section on designing rubrics	• http://tenntlc-utk-edu.wpengine.netdna-cdn.com/files/2011/10/rubric-construction.pdf • http://www.eduplace.com/rdg/res/litass/forms.html • http://www.pedagonet.com/quickies/authentic.htm
A resource worksheet for creating rubrics	• http://avillage.web.virginia.edu/iaas/assess/tools/rubrics.shtm • http://rubistar.4teachers.org/index.php • http://www.rcampus.com/indexrubric.cfm
Explains how to connect tests to student learning outcomes	• http://www.schreyerinstitute.psu.edu/Tools/TestPlanning
Making claims about student learning within contexts for learning	• http://www.learningoutcomeassessment.org/TFcomponents.htm • http://assessment.uconn.edu/primer/components.html • http://www.collegeportraits.org/MD/FSU/learning_outcomes

PRINCIPLES OF GOOD PRACTICE FOR ASSESSING STUDENT LEARNING
(http://www.learningoutcomeassessment.org/PrinciplesofAssessment.html)

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-these 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 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 progress 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 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.

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