

Northeastern Illinois University
Assessment Primer: First Steps

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STEP 1: Developing Program Goals

The assessment literature is full of terminology such as “mission,” “goals,” “objectives,” etc. but lacking in consensus on a precise meaning of each of these terms. Part of the difficulty stems from changes in approaches to education – shifts from *objective*-based, to *competency*-based, to *outcomes*-based, etc. education have taken place over the years with various champions of each espousing the benefits of using a different point of view. [Ref. 1]

The following pages will use the terms *program goals*, *program outcomes*, and *course outcomes*. Besides definitions, we also provide examples to be as clear and intuitive as possible.

Program Goals are general statements of what the program intends to accomplish. Program Goals are broad statements of the *kinds* of learning we hope students will achieve. They are statements of long range intended outcomes of the program and the curriculum. They describe the **knowledge**, **skills**, and **values** expected of graduates and should be consistent with the mission of the program and the mission of the institution. [Ref. 1] In most cases, three to five goals should be sufficient for a program since goals are further subdivided into more specific learning outcomes. Examples of both program goals and outcomes are included in this section.

One common approach for developing program goals is for department faculty to collectively describe the ideal student in their program at various phases throughout the program. Be concrete and focus on those strengths, skills, and values that you feel are the result of, or at least supported and nurtured by, the program experience. Then ask:

- What does this student know?
- What can this student do?
- What does this student care about?
- List and briefly describe the program experiences that contribute to the development of the ideal student. [Ref. 3]

In fact, program goals can be classified according to the above questions:

1. **Cognitive skills:** What the student knows
2. **Performance skills:** What the student can do with this knowledge
3. **Affective skills:** How the student values the ideas of the discipline

STEP 2: Developing Program Outcomes

Program Outcomes are statements that specify what learners will know or be able to do as a result of a learning activity; i.e., the outcomes that students must meet on the way to attaining a particular degree. Outcomes are more precise, specific, and measurable than goals. There can be more than one outcome related to each goal, and a particular outcome can support more than one goal. [Ref. 1]

Program Outcomes should be accepted and supported by members of the department. Developing appropriate and useful outcomes is an iterative process. It is only when you try to develop assessment techniques for program outcomes that the need for refining those outcomes becomes apparent. [Ref. 3]

Here is an example of the relationship between a program goal and related outcomes:

Program Goal:

Students who major in the humanities will begin to recognize themselves as “knowers,” be self-conscious about their participation in a particular culture, and cultivate their ability to discover new knowledge for themselves.

Related Program Outcomes:

1. *Students can identify the contributions of the humanities to the development of the political and cultural institutions of contemporary society.*
2. *Students can analyze the meaning of major texts from both Western and non-Western cultures.*
3. *Students can apply the humanistic perspective to values, experiences, and meanings in their own lives.* [Ref. 3]

Effective Program Outcomes follow a number of **specific characteristics** that you should be aware of:

1. Program outcome statements should be aligned with the mission and respective goal statements.
2. The outcome statements should be written in clear and simple declarative sentences.
3. They should be stated such that the outcome can be measured by more than one assessment method.
4. They should be written using action verbs to specify definite, observable behaviors.

Poor Example: *Each student will be able to function as a team member.*

Good Example: *Each student will be able to reflect upon his or her contributions to a team effort, look to other team members as resources, and accept compromises if required to achieve a team goal.*

5. The language should describe student behavior rather than teacher behavior.
6. They should be usable to identify areas to improve. [Ref. 1]
7. They should be stated so that outcomes requiring different assessment methods are not bundled into one statement (see the following example):

Example of a “bundled” statement:

Graduates will demonstrate knowledge of math, science, and engineering fundamentals, and gain competency in such basic skills as writing reports, communicating research ideas and oral presentations.

NOTE: This would likely require two different methods of assessment. Oral presentations would require a different approach than assessing knowledge of mathematics. [Ref. 2]

Examples of Program Goals and Outcomes

Mathematics Program (Russell Sage College)

<http://www.sage.edu/rsc/academics/programs/mathematics/outcomes/>

The program has three main goals and 11 outcomes, some of which address more than one goal (see numbers in parentheses behind each outcome).

Goals:

- I. To develop within our students skills in reasoning, problem-solving, critical thinking and analysis, oral and written communication, and use of appropriate technology.
- II. To develop within our students an awareness of, and abilities in, applications of mathematics in other disciplines and real-life situations.
- III. To prepare our students for meaningful employment in teaching, business, industry, government, or further study in mathematics or related fields.

Outcomes:

Upon successful completion of the major in mathematics, it is expected that graduates will:

1. Have an understanding of, and facility with, mathematical symbols and concepts (II)
2. Be able to analyze a situation from graphical, numerical, algebraic, and verbal points of view (I)
3. Be able to apply mathematical techniques to approach a problem according to the following three steps: (I, II)
 - a. Set up the problem (translate from English to mathematics)
 - b. Solve, or approximate a solution to, the problem using mathematics
 - c. Interpret the results in the context of the given problem (translate from mathematics to English)
4. Be able to make appropriate and effective use of technology to explore mathematical ideas and solve mathematical problems (I)
5. Be able to communicate mathematics effectively both orally and in writing (I)
6. Be able to understand a proof of a theorem, as well as discern flaws in a mathematical argument (I)
7. Be able to construct a proof of a theorem (I)
8. Be inclined to synthesize new mathematical material independently, placing it in a context of what is already known (I, III)
9. Be predisposed to seek out the role of women in the historical development of mathematics
10. Believe that the scientific method, rational thought, focused study, and creative exploration can be used to further progress toward the solution of problems, both within mathematics and in society at large (I, II, III)
11. Be aware of, involved with, and prepared for professional development opportunities in the discipline and related fields (II, III)

History Department (Rutgers University)

<http://history.rutgers.edu/undergraduate/learning-goals>

Goal 1: Conceptual Understanding

Students develop an understanding of the following concepts:

Outcomes 1-5:

1. How individuals are shaped by their own past and by the past of their society and institutions.
2. The role of human agency in bringing about change in society and institutions.
3. The operation of large-scale forces responsible for causing change over time, such as politics, economics, and religion.
4. The role of diversity and difference in shaping human experience.
5. The nature of cause-and-effect relationships in human affairs as they have played out over time and as they continue to operate in the present.

Goal 2: Practical Skills

Students develop the following practical skills:

Outcomes 6-9:

6. *The ability to read and understand a variety of literary forms, including primary sources such as diplomatic correspondence, journalistic reports, and private papers, as well as secondary sources written in academic prose.*
7. *The ability to analyze information effectively and construct cause-and-effect relationships from disparate data sources.*
8. *The ability to write persuasively and communicate effectively.*
9. *The ability to work independently and to conduct independent research.*

**Goals & Outcomes Descriptions from other Universities:
(Google search for: “effective academic program goals and outcomes”)**

Radiological Technology Program (Weatherford College)

<https://www.wc.edu/academics/programs-study/health-science/radiological-technology/curriculum/program-goalsoutcomes>

Ethnic Studies Program (Santa Clara University)

<https://www.scu.edu/ethnicstudies/academicprogram/goalsandobjectives.cfm>

University of Florida: Learning Outcomes listed by discipline

<https://catalog.ufl.edu/ugrad/current/Pages/academic-learning-compact.aspx>

Psychology Program (Wheaton College)

<http://www.wheaton.edu/Academics/Departments/Psychology/Graduate-Programs/Programs/PsyD-in-Clinical-Psychology/Program-Goals-and-Objectives>

African and Afro-American Studies (Brandeis University)

<https://www.brandeis.edu/departments/afroamerstudies/undergraduate/goals.html>

English Program (Russell Sage College)

<http://www.sage.edu/rsc/academics/programs/english/outcomes/>

Spanish Program (Malone University)

<http://www.malone.edu/academics/language-and-literature/learning-outcomes-spanish.php>

STEP 3: Mapping Program Goals to NEIU's Baccalaureate Goals

NEIU has created a set of baccalaureate goals that now need to be applied to all undergraduate programs on campus. This requires each program to map its already existing goals onto the baccalaureate goals. For each program, that match is likely to be imperfect. There may be program goals that do not match any baccalaureate goal and vice versa.

Many of the baccalaureate goals will be addressed not in the major, but in General Education (renamed: University Core Curriculum). We just need to ensure that every student graduating with a bachelor's degree has reached some level of proficiency on each goal either in the major or in the UCC. In order to be able to assess that, we need to identify each program's contribution to the baccalaureate goals.

This will probably not be your final attempt at mapping these goals and outcomes. The best match typically becomes clearer after you have identified which student products in which courses are best suited for assessing these outcomes.

List of NEIU's Baccalaureate Goals:

1. Intellectual and Practical Skills:
 - 1.1. Inquiry, analysis and evaluation
 - 1.2. Critical and creative thinking
 - 1.3. Written and oral communication proficiency
 - 1.4. Original design and artistic performance
 - 1.5. Quantitative literacy
 - 1.6. Information literacy and research skills
 - 1.7. Technological fluency
 - 1.8. Teamwork and problem solving
2. Immersion in Disciplines and Fields of Study:
 - 2.1. Knowledge of human cultures and the physical and natural world
 - 2.2. Mastery of different modes of knowing and integrative learning in a student's major, with a broad awareness of other areas of study
 - 2.3. Ability to synthesize general and specialized studies both within and across disciplines
 - 2.4. Use of classroom knowledge to identify and engage big questions, as well as the practical issues of everyday life
3. Learning within the Resources of Community and Diversity at NEIU:
 - 3.1. Integration of knowledge through internships, volunteerism, service learning, student teaching, applied research and writing, creative work and performance, etc.
 - 3.2. Engagement at the personal and community level
 - 3.3. Application of local and global civic knowledge
 - 3.4. Understanding and appreciation of the complexities of individual identities
 - 3.5. Intercultural knowledge and competence.

STEP 4: Mapping Program Goals/Outcomes to Courses

Once program goals and outcomes have been developed and mapped, it is time to determine where the best evidence can be found that demonstrates how well students are performing on these outcomes. First, the program faculty should discuss in which courses various outcomes are currently being addressed. Then, with the help of course syllabi, student products should be identified that allow measurement of student performance.

Here is a graphic that illustrates the first move, in which the courses in a fictitious program are identified that address various program outcomes.

Curriculum Mapping: Example of a fictitious Program

		COURSES									
Progr. Goals	Progr. Outc's	3138	3139	3638	3738	3825	3826	4739	4748	4837	4944
1	1.a										
	1.b										
	1.c										
	1.d										
	1.e										
2	2.a										
	2.b										
	2.c										
	2.d										
3	3.a										
	3.b										
	3.c										
	3.d										
	3.e										
4	4.a										
	4.b										
	4.c										

If this were a mapping of all the courses in the program, it should become evident in which course(s) outcomes are covered. This provides the background for deciding in which course students' achievement level on the outcome should best be assessed.

Step 5: Identifying Assessment Artifacts

The last step of assessment of student learning is to settle on tools to assess students' mastery of the program outcome. In-depth assessment of an important program outcome will typically require a substantial student product—such as a course project or a research paper—to allow program faculty to draw meaningful conclusions about the student's mastery level. Faculty will almost certainly have to reframe the assignment to make it suitable for program assessment purposes. In addition, such an assignment will typically require clear parameters that are pre-defined in a scoring rubric.

There are **direct assessment methods**, such as projects, assignments, presentations, portfolios, local, state, and national tests, or licensure exams. There are also **indirect assessment methods**. Those are usually surveys, such as student satisfaction inventories, alumni or employer surveys, graduating student surveys, etc. Direct assessment methods measure students' actual learning, whereas indirect methods look for satisfaction opinions. Both direct and indirect assessment methods are useful, but indirect methods are less reliable when it comes to measuring actual student learning. They ask about perceptions of learning that might have taken place months or years in the past. The time factor makes them blurry, but also a dosage of "wishful thinking" can play a significant role.

To truly assess what students have learned, direct assessment methods are clearly advantageous and, among them, **course-embedded assessment** tends to be the favorite. Course-embedded assessment makes use of assignments given in the students' classes. Such assignments then perform "double-duty" by providing the basis for determining the students' course grades, but also for functioning as indicators of what a student has learned regarding a related program outcome.

While the potential benefits are self-evident, there are also important problems to be considered. It is easy to assume a link between a particular assignment and a learning outcome. For instance, which instructor would not claim that just about any paper assignment would require students' critical thinking skills (the latter being a typical outcome in almost any program)? But vague connections between assignments and outcomes are insufficient. Every program outcome worth assessing should be defined by multiple criteria that can be measured. Program outcomes are usually defined by rubrics that (a) split the outcome typically into five to eight criteria, and (b) carefully describe three or four performance levels for each criterion (more about rubrics in future steps). Therefore, the link between a particular assignment or student artifact needs to be clearly described. One student artifact may not cover all relevant criteria of the related program outcome. It may take two or three different artifacts (such as a paper, a test, and reflective portfolio entries) to address all criteria of a program outcome.

Typical direct, embedded measures of a program outcome include:

- Student papers
- Group projects
- Student presentations
- Portfolio assignments
- Test items
- Capstone course assignments

Example of what to combine:

Course #	Outcome #	Artifact <i>(student paper, group project, presentation, portfolio, test items, capstone, etc.)</i>	Scoring Tool <i>(scoring sheet, rubric items used)</i>	Attachments <i>(copy of the rubric & the assignment instructions)</i>
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References:

1. University of Connecticut. *Assessment Primer*.
<http://assessment.uconn.edu/primer/goals1.html>. Retrieved 2/24/14
2. University of Central Florida: Operational Excellence and Assessment Support. *Program Assessment Handbook – Guidelines for Planning and Implementing*.
www.oead.ucf.edu/doc/acad_assess_handbook.pdf. Retrieved 2/25/14
3. University of Massachusetts Amherst: Office of Academic Planning & Assessment. *Program-based Review and Assessment*.
http://www.umass.edu/oapa/oapa/publications/online_handbooks/program_based.pdf
Retrieved 2/25/14

Additional Resources:

- Allen, M. J. (2004). *Assessing Academic Programs in Higher Education*. Bolton, MA: Anker Publishing.
- Suskie, L. (2009). *Assessing Student Learning: A Common Sense Guide*. San Francisco: Jossey-Bass.