Assessment Handbook

The Assessment Handbook is meant to be a condensed practical guide to support student affairs practitioners in thinking about and using assessment in their daily work.

The University of Iowa
Office of the Vice President
for Student Life

TABLE OF CONTENTS

INTRODUCTION TO STUDENT LEARNING ASSESSMENT 3
What is student learning assessment? 3
The process of assessing student learning 4
Section references 6
Identifying Learning Outcomes 7
First, a parable 7
Institution-level learning outcomes 7
Program and service-level learning outcomes 8
Learning outcome statements 9
Format 9
Evaluating learning outcomes 12
Case study 14
Section references 15
Gathering Evidence 17
Selecting an assessment tool 17
Direct versus Indirect Data 17
Assessment tools 17
Rubrics 18
Interviews and focus groups 18
Observations and documents 18
Surveys 18
Portfolio 19
Case study 20
Section references 21
Interpreting Evidence 22
Analyzing data 22
Qualitative data 22
Quantitative data 23
Communicating Results 23

Case study 25
Implementing Change 26
Completing the Cycle 27
Elements of an assessment cycle 27
Case study 27
Appendix 29

INTRODUCTION TO STUDENT LEARNING ASSESSMENT

WHAT IS STUDENT LEARNING ASSESSMENT?

According to Upcraft and Schuh (1996), assessment is "any effort to gather, analyze, and interpret evidence which describes institutional, divisional, or agency effectiveness" (p. 18). In other words, assessment enables us to determine the level of effectiveness of our programs and services. The definition of "effectiveness" may vary by our goals. For instance, is the program or service intended to:

Increase student knowledge?

Improve a student's ability to execute a specific behavior?

Change student attitudes?

Facilitate a student's reflection on a topic?

Consider the following example:

> **Case Study**: Sam is the coordinator for Survey Hall at Assessment University (AU). The majority of Sam's residents are first-year students. To increase his residents' knowledge of campus resources, Sam is creating a program called "AU Adventures." Participants in the Student Life Adventure, for instance, will visit the Office of Student Life and meet its director; receive a free t-shirt; observe part of a Student Senate meeting; engage in a question/answer session with representatives from student organizations; and learn about different academic resources. *If you were Sam, how would you define "effectiveness" for this program?*

Sam might define "effectiveness" in terms of participation and record the number of participants in the program, or he might define it in terms of satisfaction and have participants rate how much they liked AU Adventures. While the information he collects could be useful in planning future programs, it doesn't tell us how effectively "AU Adventures" increases residents' *knowledge* of campus resources – Sam's reason for creating the program in the first place. To obtain this information, Sam must assess student learning – what his residents know, think, and are able to do as a result of participating in "AU Adventures." Student learning assessment, the subject of this handbook, enables us to:

- *Articulate what we want students to learn from our programs and services;*

- *Determine whether or not students learn what we want them to learn;*

- *Make informed decisions about how to modify programs and services to better support student learning; and*

- *Demonstrate our role in fulfilling the educational mission of the institution.*

THE PROCESS OF ASSESSING STUDENT LEARNING

Viewed broadly, student learning assessment is a four-step process:

1. Identifying learning outcomes (*determining what students should know, think, and be able to do as a result of a program or service*);

2. Gathering evidence (*creating opportunities for students to demonstrate what they have learned*);

3. Interpreting evidence (*drawing conclusions based on students' performance)*;

4. Implementing change (*using conclusions to modify the program or service*).

Student learning assessment is cyclical. Unless we assess the modified program or service, we are unable to determine whether or not the changes we made actually *improved* student learning. Thus, the fourth step – implementing change – serves as a jumping-off point for future assessment, thereby creating an ongoing cycle of improvement (see Figure 1).

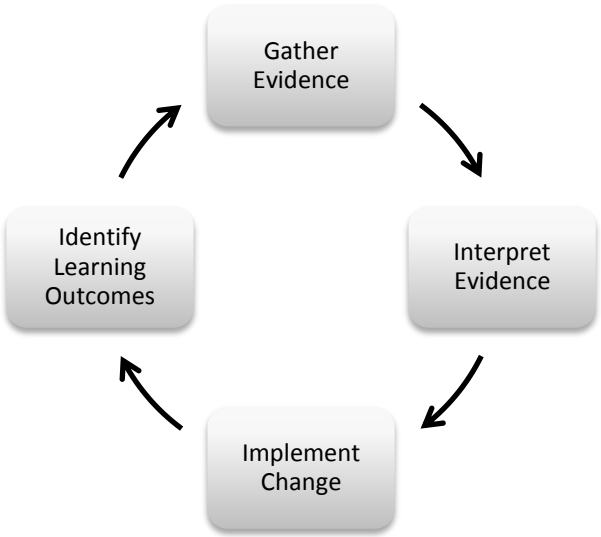


Figure 1: The assessment loop

Only through ongoing, well-planned assessment are we able to answer, not just some, but *all* of the following questions:


WRAC: Iowa N.E.W. Leadership

- *What are we trying to do and why?*
- *What is this program/service supposed to accomplish?*
- *How well are we doing it?*
- *How do we use the information to improve or celebrate success?*
- *Do the improvements we make work?*

(Adapted from Bresciani, 2002; as cited in Bresciani, Zelna, & Anderson, 2004)

In learning about student learning assessment it is also helpful to know some frequently used terms. For more information please see Table 1 in the Appendix.

SECTION REFERENCES

American Association of Colleges and Universities. (2010). *Liberal Education and America's Promise (LEAP): Essential learning outcomes*. Retrieved from http://www.aacu.org/leap/vision.cfm

Bresciani, M. J., Zelna, C. L., & Anderson, J. A. (2004). *Assessing student learning and development: A handbook for practitioners*. Washington, D.C.: National Association of Student Personnel Administrators.

New Horizons for Learning. (2002). *Assessment terminology: A glossary of useful terms*. Retrieved from http://www.newhorizons.org/strategies/assess/terminology.htm

Ozarka College. (n.d.). *Glossary of assessment terms*. Retrieved from http://www.ozarka.edu/assessment/glossary.cfm

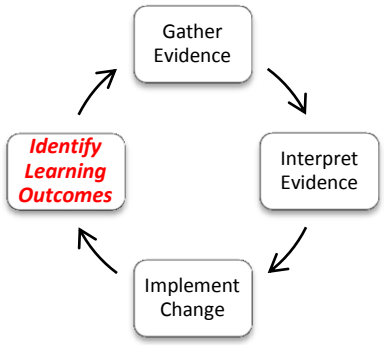
Upcraft, M. L., & Schuh, J. H. (1996). *Assessment in student affairs: A guide for practitioners*. San Francisco, CA: Jossey-Bass.

Upcraft, M. L., & Schuh, J. H. (2001). *Assessment practice in student affairs*: *An applications manual*. San Francisco, CA: Jossey-Bass.

The University of Iowa. (2002). *Welcome*. Retrieved from http://research.uiowa.edu/hso/

Walvoord, B. E., (2004). *Assessment clear and simple: A practical guide for institutions, departments, and general education*. San Francisco, CA: Jossey-Bass.

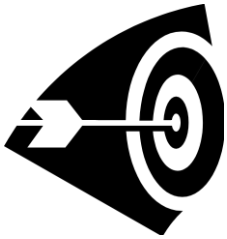
IDENTIFYING LEARNING OUTCOMES



FIRST, A PARABLE

"The story is told of the city slicker who gets off the train in a small mountain town. He notices a youth down the street who is taking pot shots with a BB gun at various targets (the side of a barn, a picket fence, and a stop sign). The youth then walks up to the target and appears to study the shot, and moves on. Approaching the first target, the visitor is impressed to note that the shot is dead center in the middle of a bull's eye. The same is true with each target! He catches up with the youngster and says, 'Young lady, I am very impressed with your shooting. How did you learn to shoot that well?' She pauses a moment and says, 'Aw, shucks, it ain't nothing. I shoot first and draw a circle around the hole later'" (Komives & Schoper, 2006, p. 17).

With this parable, Komives and Schoper (2006) challenge us to identify the intended "target" of our work (i.e., its intended learning outcomes) *first* and design programs and services to "hit" the target (i.e., result in the desired learning) *second*. In addition to making our work more meaningful and fulfilling (because we *know more* about the difference we are making) this approach is simply smart practice – our time, money, and energy are limited. Assessment helps us make decisions and direct our energies to most directly benefit our students. This section provides useful tools for doing just that.



INSTITUTION-LEVEL LEARNING OUTCOMES

As we think about our program-level goals, it may be helpful to take a broader view – "What should a student know and be able to do upon graduation from The University of Iowa?"

In March of 2010, the Council on Student Learning – a faculty-staff committee in the Office of the Provost – identified the learning outcomes for undergraduate education at The University of Iowa. These learning outcomes include:

- *Knowledge and understanding of human cultures and of the physical and natural worlds;*
- *Intellectual and practical skills;*
- *Personal, intellectual, and social responsibility; and*
- *The ability to apply knowledge and skills in new settings and situations (The University of Iowa, 2010).*

Collectively, these learning outcomes "help students view their wide-ranging educational experiences at The University of Iowa as an integrated whole…and encompass undergraduate student learning inside and outside the classroom" (The University of Iowa, 2010). The learning outcomes of our programs and services should support our institutional goals. As Komives and Schoper (2006) observe, "developing our learning outcomes in line with institutional outcomes and priorities embeds the work of student affairs in student learning" (p. 13).


Recreational Services: Intramural Officials

PROGRAM AND SERVICE-LEVEL LEARNING OUTCOMES

Institution-level learning outcomes, because they are intended to capture the breadth of students' learning experiences during college, are often quite general. The University of Iowa's intellectual and practical skills learning outcome, for instance, encompasses inquiry and analysis; critical and creative thinking; written, oral, and visual communication; quantitative literacy; information literacy; technological proficiency; and teamwork and problem solving (The University of Iowa, 2010). However, the more targeted a unit's mission, the more specific its learning outcomes can – and should – be. Take a look at the Division of Student Life Mission, Definition of Student Success, and Priorities.

***Table 2*: Purpose Statements of the Division of Student Life**
Mission
The Division of Student Life fosters student success by creating and promoting educationally purposeful activities within and beyond the classroom.
Definition of Student Success
Successful students develop skills and knowledge, become more mature in their thinking, assume greater responsibility for their own lives and learning, develop understanding of diversity and multiculturalism, and become effective leaders.
Priorities
Fostering undergraduate student leadership; supporting multicultural competence in our students and ourselves; and creating a healthy and safe campus and community.

Clearly, the Division's learning outcomes center around leadership skills, multicultural knowledge, awareness, and skills, personal responsibility and practical skills, and critical thinking. Collectively, they align most closely with the *intellectual and practical skills* and *personal, intellectual, and social responsibility* learning outcomes of the institution. Compared to the institution's learning outcomes, those of the Division are more specific and descriptive.

Program- and service-level learning outcomes are even more specific and descriptive. Examples from programs and services in the Division include the abilities to:

- *Create a vision as a leader* (LeaderShape Institute, Center for Student Involvement and Leadership);
- *Request accommodations* (advising, Student Disability Services);
- *Identify strategies for promoting health* (visiting the clinic, Student Health Service);
- *Describe current events and political issues* (Iowa N.E.W. Leadership, Women's Resource and Action Center);
- *Communicate effectively in an emotional environment* (employment as an intramural official, Recreational Services); and
- *Identify campus resources* (The Path, University Housing and Dining).

LEARNING OUTCOME STATEMENTS

FORMAT

An easy format to use for writing learning outcomes is to follow the SWiBAT formula: **S**tudents (who _____) **wi**ll **b**e **a**ble **t**o _____. Here are some examples of learning outcomes using the SWiBAT formula:

Students will be able to successfully discuss accommodation needs with their instructors.

Students who work as intramural officials will be able to demonstrate appropriate conflict resolution skills in an emotional environment.

Students who participate in The Path will be able to identify at least two academic support resources on campus.

Below is general outline for writing outcomes in the SWiBAT format.

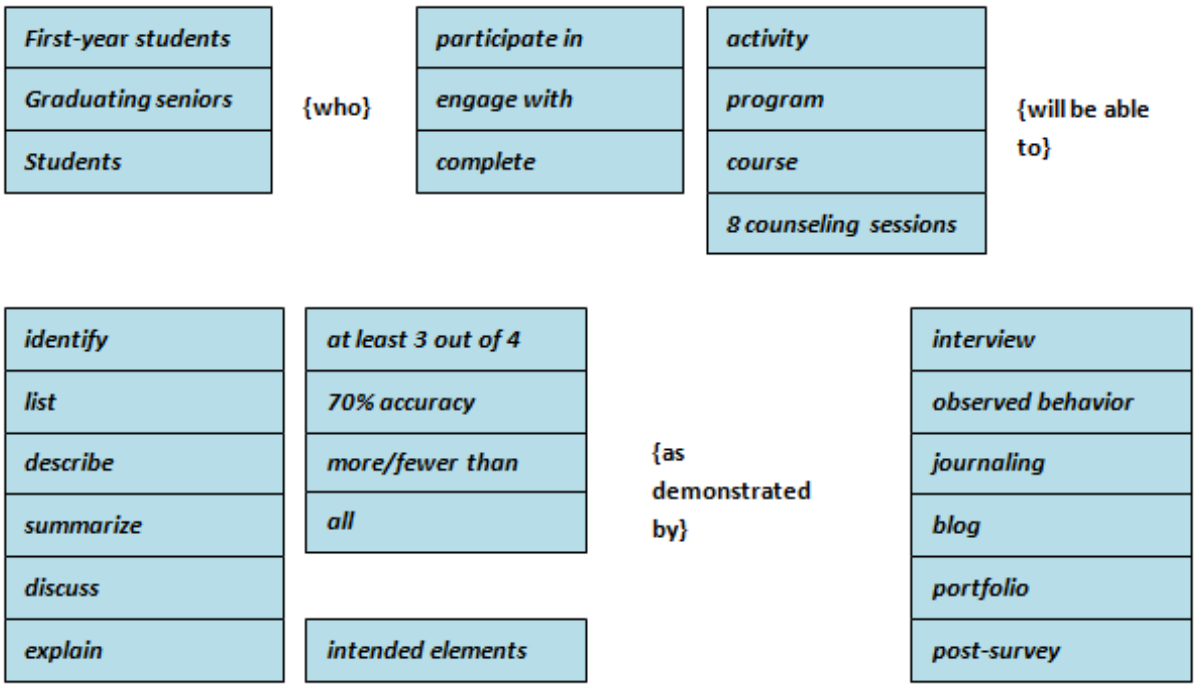


Figure 5: Typical format of a learning outcome statement (Keeling & Associates, LLC, 2007)

When writing learning outcome statements that describe cognitive growth, it may be helpful to refer to Bloom's (1956) taxonomy, or hierarchy, of learning in the cognitive domain. Student learning outcomes should reflect the level of learning you want students to demonstrate. In a one-hour training session it makes sense for your outcomes to focus on remembering or restating a key idea, while in a year-long program, outcomes would likely reflect higher level learning such as analyzing or evaluating. Here's the updated version of Bloom's taxonomy:

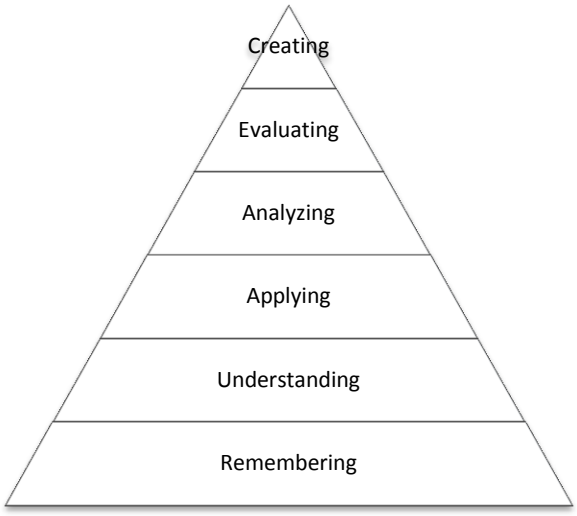


Figure 2: Updated version of Bloom's taxonomy of learning in the cognitive domain

The Center for University Teaching, Learning, and Assessment at the University of West Florida provides a list of words describing behaviors associated with Bloom's taxonomy (see Figure 3)

Knowledge	Understand	Apply	Analyze	Evaluate	Create
define	explain	solve	analyze	reframe	design
identify	describe	apply	compare	criticize	compose
describe	interpret	illustrate	classify	evaluate	create
label	paraphrase	modify	contrast	order	plan
list	summarize	use	distinguish	appraise	combine
name	classify	calculate	infer	judge	formulate
state	compare	change	separate	support	invent
match	differentiate	choose	explain	compare	hypothesize
recognize	discuss	demonstrate	select	decide	substitute
select	distinguish	discover	categorize	discriminate	write
examine	extend	experiment	connect	recommend	compile
locate	predict	relate	differentiate	summarize	construct
memorize	associate	show	discriminate	assess	develop
quote	contrast	sketch	divide	choose	generalize
recall	convert	complete	order	convince	integrate
reproduce	demonstrate	construct	point out	defend	modify
tabulate	estimate	dramatize	prioritize	estimate	organize
tell	express	interpret	subdivide	find errors	prepare
copy	identify	manipulate	survey	grade	produce
discover	indicate	paint	advertise	measure	rearrange
duplicate	infer	prepare	appraise	predict	rewrite
enumerate	relate	produce	break down	rank	role-play
listen	restate	report	calculate	score	adapt
observe	select	teach	conclude	select	anticipate
omit	translate	act	correlate	test	arrange
read	ask	administer	criticize	argue	assemble
recite	cite	articulate	deduce	conclude	choose
record	discover	chart	devise	consider	collaborate
repeat	generalize	collect	diagram	critique	collect
retell	give examples	compute	dissect	debate	devise
visualize	group	determine	estimate	distinguish	express
	illustrate	develop	evaluate	editorialize	facilitate
	judge	employ	experiment	justify	imagine
	observe	establish	focus	persuade	infer
	order	examine	illustrate	rate	intervene
	report	explain	organize	weigh	justify
	represent	interview	outline		make
	research	judge	plan		manage
	review	list	question		negotiate
	rewrite	operate	test		originate
	show	practice			propose
	trace	predict			reorganize
	transform	record			report
		schedule			revise
		simulate			schematize
		transfer			simulate
		write			solve
					speculate
					structure
					support
					test
					validate

Figure 3: Action words for Bloom's taxonomy of the cognitive domain

Bloom, Krathwhol and Masia (1964) also developed a taxonomy for learning in the affective domain, depicted in Figure 4.

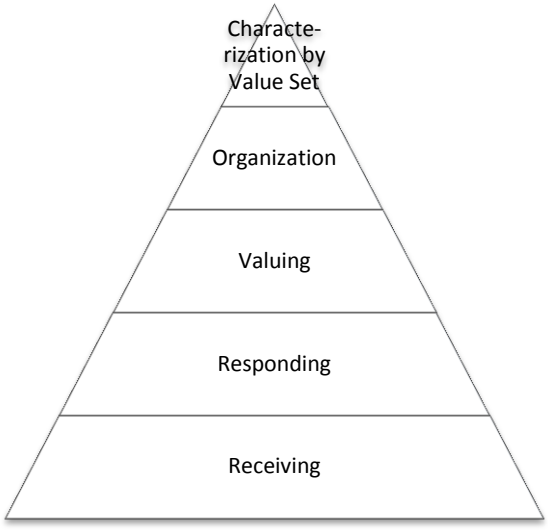


Figure 4: Bloom's taxonomy of learning in the affective domain

As we write learning outcomes, it is helpful to have a range of action words to describe the various levels of learning. Please view Table 3 in the Appendix for more information.

Evaluating learning outcomes

So, how do you tell if the learning outcomes are capturing what you want? How do you know if they will lend themselves to good measures? Take a look at a learning outcome you've developed and run through these questions as a check:

***Table 3*: Evaluating Learning Outcomes**
Does the outcome support the program objectives?
Does the outcome describe what the program intends for students to know, think, or be able to do?
Is the outcome important/worthwhile? Will assessing it give you valuable information?
Is the outcome: • Detailed and specific? • Measurable/identifiable? • A result of learning?
Can you create an activity to enable students to learn the desired outcome?
Can the outcome be used to make decisions on how to improve the program?

Learning outcomes should be specific and measurable. If they aren't, they will be difficult to assess. Here are some examples of difficult to assess outcomes (Scagliola, 2007):

Too general and very hard to measure:

…will appreciate the benefits of exercise.
…will be able to access resources at the University of Rhode Island.
…will develop problem-solving skills and conflict resolution.
…will be able to have more confidence in their abilities.

Still general and hard to measure:

…will value exercise as a stress reduction tool.
…will be able to develop and apply effective problem solving skills that would enable one to adequately navigate through the proper resources within the university.
…will demonstrate ability to resolve personal conflicts and assist others in resolving conflicts.
…will demonstrate critical thinking skills, such as problem solving, as they relate to social issues.

Specific and relatively easy to measure:

…will be able to explain how exercise affects stress.
…will be able to identify the most appropriate resource that is pertinent to their university concern.
…will be able to assist roommates in resolving conflicts by helping them negotiate agreements.
…will demonstrate the ability to analyze and respond to arguments about racial discrimination. (Scagliola, 2007)

Writing outcomes takes practice. Here are some common mistakes and easy ways to identify whether your outcomes will help or hinder your assessment efforts:

- The learning outcome does not support program, department, division, or institution goals.
  - Notes: Outcomes should measure what's important in your program or service. If it's incidental to what you are trying to accomplish, don't waste your time assessing it. Focus on your goal(s) and anchor everything you do to them and your efforts will be richer and more helpful to you.

- The learning outcome describes behavior using words that are difficult to measure (e.g., *understand, be aware*, *appreciate*)
  - Notes: How do we know if someone understands? Generally, they have to demonstrate that understanding in some way, and *that's* what we assess. For

example, they may explain, state, list, or identify. These are clearer ways to determine understanding. Awareness or appreciation are also difficult to assess so think about what a student would be able to do to demonstrate that they are aware or that they appreciate.

- The learning outcome describes more than one behavior.
  - Notes: If goals are complex (create a vision and act on it), then outcomes should be written for each major component, rather than embedded in one statement.

- The learning outcomes describe every possible thing a student could learn from the program or service.
  - Notes: Focus on the goal, forget the "extras" or "nice to know" stuff.

- The learning outcome does not actually describe learning.
  - Notes: Satisfaction can keep students using your program and taking your course. Certainly, we want students to have a positive experience with us. But learning and satisfaction are, indeed, different and learning outcomes should address the former vs. the latter.

CASE STUDY

Now that we have learned how to identify learning outcomes, let us revisit our case study.

Case Study: After attending a workshop on student learning assessment, Sam decides to identify learning outcomes for "AU Adventures" before continuing the program's creation. According to the workshop, learning outcomes should support program, department, division, and institution goals; contain SWiBAT components (Students will be able to…); and be specific and measurable. Two of the outcomes Sam develops are: After participating in AU Adventures students will be able to list one academic resource, and, After participating in AU Adventures students will be able to name one thing they learned about succeeding at AU from the director of the Office of Student Life. [To be continued]

SECTION REFERENCES

Bloom, B. S. (Ed.). (1956). *Taxonomy of educational objectives, the classification of educational goals – Handbook I: Cognitive domain*. New York, NY: McKay.

Center for University Teaching, Learning, and Assessment. (2010). *Action words for Bloom's Taxonomy*. Retrieved from http://uwf.edu/cutla/SLO/ActionWords.pdf

Keeling, R. P., & Associates (2007). *Putting Learning Reconsidered into practice: Developing and assessment student learning outcomes*. Retrieved from http://studentaffairs.uncg.edu/assessment/wp-content/uploads/learning_reconsidered_institute_workshop.pdf

Komives, S. R., & Schoper, S. (2006). Developing learning outcomes. In R. P. Keeling (Ed.), *Learning reconsidered 2: Implementing a campus-wide focus on the student experience* (17-41). Washington, DC: National Association of Student Personnel Administrators (NASPA) and allied associations.

Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1964). *Taxonomy of educational objectives, the classification of educational goals – Handbook II: The affective domain*. New York, NY: McKay.

Office of Student Life Research and Assessment. (2009). *Office of Student Life organizational effectiveness workshop*. Retrieved from http://slra.osu.edu/posts/documents/oe-slides-june-5-final-2.pdf

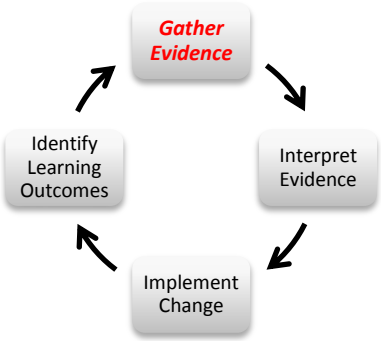
Scagliola, L. (2007). *Student learning outcomes 101*. Retrieved from http://www.uri.edu/assessment/media/public/

page_files/uri/outcomes/student/outcomes/outcomes_tools/Handout_Student_Learning_Outcomes_101__8_7_06.pdf

The University of Iowa. (2010). *Undergraduate learning outcomes at The University of Iowa*. Retrieved from http://www.uiowa.edu/~outcomes/UndergraduateLearningOutcomes.htm

University of Connecticut. (n.d.). *Learning taxonomy – Krathwohl's affective domain.* Retrieved from http://www. assessment.uconn.edu/docs/LearningTaxonomy_Affective.pdf

GATHERING EVIDENCE



SELECTING AN ASSESSMENT TOOL

Now that we have our outcomes, we have to determine how we'll assess them. Consider these questions:

1. *Which outcome(s) do you want to measure?* Rather than assessing all learning outcomes at once, you may want to focus on specific groups of learning outcomes to make the assessment process more manageable.

2. *How will you know if a student has achieved the outcome? What will achieving the outcome "look like"?*

3. *For example:*
   a. *What do "effective presentation skills" look like?*
   b. *What are the essential elements that must be present in a "leadership vision"?*
   c. *What does a student need to be able to tell you for you to know they can identify their next steps for counseling or treatment?*

We are often asked what the "best assessment" method is. Really, the best method is one that measures your outcome as effectively and efficiently as possible, is pertinent to your key stakeholders, and that gives you useful and useable data. Consider the audience for your assessment data – what types of data do they respond to?

When possible, select a method that actually captures how students demonstrate what they have learned vs. their perception of what they've learned.

DIRECT VERSUS INDIRECT DATA

Direct measures of collecting information require students to *display* learning. Examples include collections of student work, pre-post tests, performance on a case study.

Indirect measures ask students or others to *reflect* on student learning. Examples include questions asking self-perceptions of learning, job placement statistics, the percentage of students who graduate.

When writing questions or selecting a method, note that there is a difference in asking students *if* they learned vs. *what* they learned. We are most interested in *what* they have learned.

ASSESSMENT TOOLS

Below are brief explanations of some of the common assessment methods and a table to help you compare and contrast. Once you have an idea of what assessment method would fit with assessing your student learning outcomes, feel free to contact Sarah Hansen and/or Teri Schnelle for more information on the specific assessment method.

Rubrics

Rubrics are a detailed set of criteria for defining the standards for evaluation performance. Rubrics can vary in complexity from simple checklists to detailed components with detailed scales.

Interviews and focus groups

An interview is a purposeful discussion with a single individual to get information. A focus group is an interview with a small group of people on a specific topic or experience. Both of these assessment methods are a great way to gather rich detail or deeper levels of information on a specific topic (Bresciani, Zelna, & Anderson, 2004).

Observations and documents

In using observation as an assessment method for student learning, you would watch and then record (with very detailed notes) a specific phenomenon in the context in which it occurs. With this assessment method you would assess student learning as it occurs in a specific context. For example, you might watch as a student goes through the steps of CPR, or teaches an aerobics class, to see if they are doing it correctly. You could also observe a tutor in action to see if s/he is utilizing effective teaching strategies.

Using documents to assess student learning consists of gathering documents such as minutes from meetings, reports, or files and analyzing these documents for information on learning outcomes (Bresciani, Zelna, & Anderson, 2004).

Surveys

Surveys are an assessment method where descriptive data about attitudes, behaviors, opinions, and values of an individual are collected. Surveys come in many different forms (email, phone, mail, etc.) and can include many different question types (multiple choice, short answer, matrix, etc.). There are also survey software programs available for use (Qualtrics, SurveyMonkey, etc.). The University provides Qualtrics which is a robust survey software available to anyone with a HawkID. Sign in via uiowa.qualtrics.com to get started.

PORTFOLIO

A portfolio is a collection of artifacts such as writing samples, projects, journals, etc. that demonstrate student learning.

Method	General Description	Strengths	Weaknesses
Rubric	Detailed set of criteria for defining the standards for evaluation performance	- Ability to develop a home grown rubric - Ability to use and tailor existing rubrics - Expose to students what we want them to learn - Reduces bias and/or subjectivity	Can take time to develop Multiple raters may have to coordinate ratings for reliability
Interviews	A purposeful discussion with a single individual to get information	- Rich detail - Deeper levels of information - Gather information on topics we know little about - Does not require professional moderator - Does not require special facilities - Good for discussing sensitive topics -Flexible	- Transcribing recorded conversation takes time and effort or if an outside company is hired to transcribe, money - A note-taker is recommended to ensure conversation is recorded - Time consuming if a large sample of students is needed - Breadth of understanding - Difficult to select and solicit participants - Not representative of population
Focus Groups	An interview with a small group of people to get information on a specific topic or experience	- Rich detail - Deeper levels of information - Gather information on topics we know little about/testing ideas - Does not require professional moderator - Does not require special facilities - Flexible - A large amount of data in a short amount of time	- Transcribing recorded conversation takes time and effort or if an outside company is hired to transcribe, money - A note-taker is recommended to ensure conversation is recorded - Breadth of understanding - Difficult to select and solicit participants - Not representative of population
Observations	Watching and recording a phenomenon within the context in which occurs	- Study natural behavior - Gather rich detail about behaviors	- Based on the experience of the observer (bias, interpretation)
Documents	Gathering documents such as minutes from meetings, reports, or files and analyzing them	- Cost effective - Does not require soliciting participants	- Does not directly measure behavior, opinions, attitudes, or values
Survey	Descriptive data about attitudes, behaviors, opinions, values of an individual are collected	- Flexible (multiple formats and question formats) - Ask a larger number of questions - Breadth of topics and understanding - Ability to develop internally or use standardized surveys -Questions can be written to get at direct measures of learning	- Can result in a large amount of data - Based on self-report data which depends on accurate and honest responses - Often gathers data on indirect forms of student learning

Portfolio	A collection of artifacts that demonstrate student learning	- Opportunities for reflection - Opportunity for personal selection and self-assessment - Look at learning outcomes over time	- Labor and time intensive to compile and review

Adapted from Bresciani, Zelna, & Anderson (2004), Morgan (1998), Sanderson (2007), and Sanderson, Ketcham, Alexander (2008).

CASE STUDY

Now that we have learned about gathering evidence and selecting an assessment tool, let's revisit our case study.

> **Case Study**: After identifying learning outcomes, Sam decides to outline a plan for assessing "AU Adventures" before gathering evidence about the program. According to the workshop, he needs to first determine which outcome(s) he wants to measure and then outline how he will know if a student has achieved the outcome(s). After these steps he decides on an assessment method that will give him valuable data he can use to improve the program. He decides to implement a survey to gather evidence on learning outcomes. Sam plans to measure the two outcomes mentioned earlier: are students are able to list one academic resource and name one thing learned from the director of Student Life? [To be continued]

SECTION REFERENCES

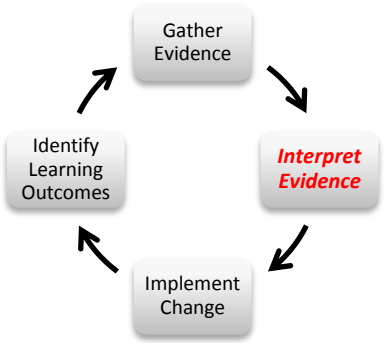
Bresciani, M. J., Zelna, C. L., & Anderson, J. A. (2004). *Assessing student learning and development: A handbook for practitioners*. Washington, D.C.: National Association of Student Personnel Administrators.

Morgan, D.L. (1998). *The focus group guidebook.* Thousand Oaks, CA: Sage.

Sanderson, R. (2007). *Assessment 103* [PDF document]. Retrieved from http://oregonstate.edu/studentaffairs/sites/default/files/docs/assessment103.pdf

Sanderson, R., Ketcham, P. & Alexander, J. (2008). *The "What," "How," and "So What?" of Assessment Measures* [PDF document]**.** Retrieved from http://oregonstate.edu/studentaffairs/sites/default/files/docs/TheWhatHowandSoWhatofAssessment2008.pdf

INTERPRETING EVIDENCE



ANALYZING DATA

Data can be either qualitative or quantitative. Qualitative data describe things in terms of categorizations or qualities while quantitative data can be counted or expressed numerically. Your approach to analyzing your data depends on the nature of the data.

> *"Data analysis is the process of bringing order, structure, and meaning to the mass of collected data. It is a messy, ambiguous, time-consuming, creative, and fascinating process. It does not proceed in linear fashion; it is not neat. Qualitative data analysis is a search for general statements about relationships among categories of data"* (Marshall & Rossman, 1999; as cited in Elkins, 2009).

QUALITATIVE DATA

Qualitative data may include responses to a survey that asks student to define leadership in their own words, notes and recordings from a focus group, or interviews with students about what they learned through an experience.
When analyzing qualitative data the general process is:

1. Organize the data
2. Give the data a "onceover," noting initial impressions
3. Categorize the data
    - You can determine the categories ahead of time, allow the categories to emerge from the data, or both
    - You may end up with subcategories
    - Categorizing data is an iterative process
4. Determine the relative significant of each category by counting the number of times it occurs
5. Note the responses that do not fit into the categories
6. Find compelling quotes to include in your assessment report
7. Take a step back
    - What do the data tell you about your assessment question?
    - What are the limitations?
    - What are the implications?
    - Does the data lead you to make changes or confirm your approach (or both)?
    - What, if anything, will you change about the assessment process?

QUANTITATIVE DATA

A few examples of quantitative data include: responses to a survey that asks student to rate their level of agreement with a statement (1=strongly disagree to 5=strongly agree) or a pile of rubrics that rate students on their ability to explain the importance of physical activity.

When analyzing quantitative data the general process is:

1. Organize the data
2. Give the data a "onceover," noting initial impressions
3. Four analytic strategies
    - Description (frequencies, percentages, mean, median, mode, range, standard deviation)
    - Differences (participants versus non-participants; do certain participants do better than others?)
    - Change (pre/post)
    - Expectations (do students meet our expectations)
4. Alone, neither measures of central tendency (e.g. mean, mode, median) nor measure of variability (e.g. range, standard deviation) tell the whole story
    - Consider this example: Group 1 scores are 190, 195, 199, 200, 200, 201, 205, 210 and Group 2 scores are 0, 10, 20, 200, 200, 380, 390, 400. Scores from Group 1 and Group 2 have the same central tendency but you might make different conclusions about their scores if you look at the full range.
5. Conduct other useful calculations (e.g. sums, percentages)
6. Take a step back
    - What do the data tell you about your assessment questions? – What?
    - What are its implications for policy and/or practice? – So What?
    - What, if anything, will you change about the program or process? – Now What?
7. Other considerations
    - Use online survey design software, Microsoft Excel, or SPSS to make calculations
    - For help with statistical analysis (e.g. statistical significance, confidence intervals, etc.) seek help from an expert at your institution

COMMUNICATING RESULTS

Telling your assessment story happens when you communicate results with your key stakeholders. This is an essential aspect of making assessment a valuable part of your work – it's also often the part we leave out, because we get busy doing the next program and don't close the loop to let folks know whether the previous program achieved its goals.

1. Determine your audience(s)

Ideally, you should tailor your communication of results to each specific audience.

Possible audiences could include:

- Administrators
- Partners/collaborators
- Students
- Parents
- Funding sources
- Faculty members
- Referral sources
- Colleagues
- Community members
- Others?

2. Target communication to your audience(s)

Target your communication specifically to your audience(s) by determining what information is the most relevant to them and what communication format is the most effective.

3. Keep it simple

When communicating results to your audience keep in mind the "central nuggets" of information, focus on implications, connect results to outcomes/goals, anticipate questions, and provide answers. The reality is that your assessment report is one of many pieces of information your director or administrator may be receiving daily. Consider paring your information down to what they really need to know. In an influential study in the health domain on the gap between research and policy (Sorian & Baugh, 2002) *policymakers reported…*

•They **read 27% of what they received in detail**

•**Skimmed 53% for general content**

•**"Never get to" 35% of the material**

•49% of the material they receive is **not "relevant" to their purposes.**

–67% focus on information related to current debates

–25% cite impact on "real" people

–11% indicated an “easy-to-read” format

4. Choose a communication format that fits your audience
    - Possible communication formats to choose from are:
        - Report
        - Poster or flier
        - Presentation
        - Newsletter
        - Student newspaper
        - Website
        - Others?

5. When possible, combine quantitative data with qualitative data

    Combining quantitative and qualitative data turns the communication of results into a story about what you discovered and what you determined. While people respond to stories, adding quantitative data helps convey that there is more than one story to tell.

Example:

“ … I came to see you over a year ago for smoking cessation help and I used Chantix to quit. I wanted to let you know that next Wednesday will be the one year anniversary of my quit date, and I have not smoked since then. One year free! I just wanted to thank you for your help again. It’s a great feeling to have

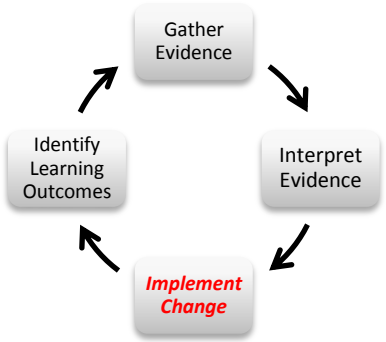
Students who participate in tobacco cessation consultations at Health Iowa have a 40% cessation rate.

CASE STUDY

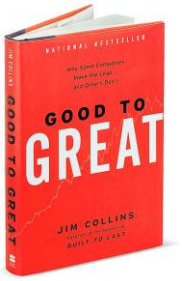
Now that we have learned about analyzing and communicating our results, let us revisit our case study.

Case Study: Now that Sam has gathered evidence he needs to analyze the data to determine the major take away points and communicate the results. First he needs to determine if his data is quantitative or qualitative in nature to conduct the correct analysis. Sam decided previously to use a survey which provides him with qualitative data. Although Sam’s questions were open-ended, his analysis involves counting correct responses. He found that only half the students surveyed could name an academic resource but almost every student could name something they learned from the director. After coming away with these major points he needs to communicate his results by tailoring the information for different audiences. [To be continued]

IMPLEMENTING CHANGE



AN EXAMPLE



In the book *Good to Great*, Jim Collins compares companies that went from being good to being great with companies that failed to make the same leap. Upon looking at these companies Collins concluded that the good-to-great companies, "confront the brutal facts," "have a culture of discipline," and were transformed through a *cumulative* process. At first glance, the book has little to do with assessment – the word "assessment" doesn't even appear, in fact. But the good-to-great companies share some characteristics related to organizations with strong cultures of assessment. The idea of a culture of disciplined thought and reflection, the claim that the lack of resources does not mean a lack of disciplined thought (it makes rigor all the more important), and confronting the brutal facts and doing "autopsies" on projects without placing blame are common in both good-to-great companies and assessment.

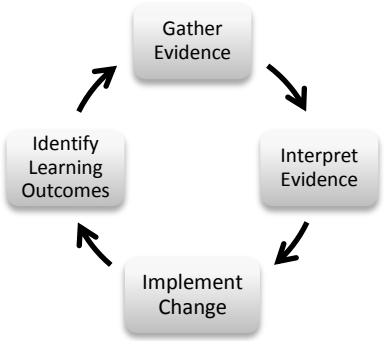
Assessment is ultimately about making sound decisions based on good evidence. In *Good to Great* language, it's about disciplined thought. The concept of "autopsies without blame" is also relevant to assessment. One of the barriers to good assessment is the fear that our results will show our programs or services aren't effective – and perhaps, that we'll lose status, resources, etc. The reality is that a culture focused on improvement, not perfection, is our goal. Autopsies without blame involve sharing assessment data, looking at it honestly, and finding ways, together, that we can improve.

At the same time we need to foster a culture of discipline. We need to *act* on our assessment findings. We need to ask ourselves the question, according to Collins, "Once you know the right thing, do you have the discipline to do the right thing and, equally important, to stop doing the wrong thing?" Assessment gives us the ability to stop programs or practices that "we've always done that way" if we have evidence that they aren't meeting our goals. We need to take advantage of this opportunity.

Finally, we should always celebrate the small successes. Assessment, as we will discuss in the following section, is a cyclical, cumulative process. Transformations do not happen in an instant and every small success we encounter should be celebrated, especially as a stepping stone to a good-to-great transformation.

> *"The good-to-great transformations never happened in one fell swoop. There was no single defining action, no grand program, no* one *killer innovation, no solitary lucky break, no miracle moment."* - Jim Collins, *Good to Great*

COMPLETING THE CYCLE



Assessment is a cyclical process. Once you implement change, the assessment process begins again, as you assess whether or not the changes you made had their intended effect. Some of you may be panicking right now, "Hold on! Does this mean I have to assess everything all the time?!" The answer is no, while everything is important, we are not in a position to act or make change on "everything, all the time." In fact, you can create an assessment cycle to determine what to assess and when, thereby making assessment a very manageable process. In reality, there may be a gap between implementing change and reassessing. This is fine and often desirable, as it gives some time for us to find our new rhythm with changes before assessing them.

ELEMENTS OF AN ASSESSMENT CYCLE

The first element of an assessment cycle is to determine a timeline and be realistic about what you can assess when. An organizing framework may be useful. For instance, you may want to connect your assessment cycle to Division goals, institutional learning outcomes, or emphasis areas in your department. For example, you might choose to assess programs that most relate to leadership one year, those with a focus on multiculturalism during year two, etc. Or alternate between your group programs and individual consultations every other year. Below is a way to organize your assessment cycle.

Department Learning Outcome	Year(s) when outcome is assessed				
	1st	2nd	3rd	4th	Every year

CASE STUDY

Now that we have learned about the assessment process, let's revisit the case study for the final time.

Case Study: Sam has learned all the steps to conducting an assessment of student learning outcomes for his program "AU Adventures." He used the evidence gathered to make decisions about and improvements to the program. Based on his assessment results, Sam has decided to create a specific session to teach student about academic resources, but will not change their trip to the Office of Student Life. After implementing these changes, he will assess again in the future to determine if the changes he made had the intended effect.

APPENDIX

***Table 1*: Key terms related to student learning assessment**	
Assessment	Any effort to gather, analyze, and interpret evidence which describes institutional, departmental, divisional, or agency effectiveness (Upcraft & Schuh, 1996).
Direct measure of student learning	A measure that directly evaluates student learning (Walvoord, 2004). *E.g., a survey question that asks students to define leadership in their own words*
Evaluation	Any effort to use assessment evidence to improve institutional, departmental, divisional, or institutional effectiveness (Upcraft & Schuh, 1996).
Indirect measure of student learning	A measure that evaluates perceived, rather than actual, learning (Walvoord, 2004). *E.g., a survey question that asks students to rate their understanding of leadership on a scale from 1 (very low understanding) to 5 (very high understanding)*
Institutional Review Board	A group of individuals charged with reviewing proposed research involving human subjects to ensure the protection of those subjects and compliance with federal human subjects regulations (The University of Iowa, 2002).
Learning outcome	What students should know, think, and be able to do as a result of an experience. *E.g., The American Association of Colleges and Universities (2010) established four learning outcomes for liberal arts education: knowledge of human cultures and the physical and natural worlds; intellectual and practical skills; personal and social responsibility; and integrative and applied learning.*
Measurement	The methods used to gather information for the purposes of assessment (Upcraft & Schuh, 2001). *E.g., survey, focus group, interview, portfolio*
Qualitative methodology	Involves the detailed description of situations, events, people, interactions, and observed behaviors; the use of direct quotations from people about their experiences, attitudes, beliefs, and thoughts; and the analysis of excerpts or entire passages from documents, correspondence, records, and case histories (Upcraft & Schuh, 2001).
Quantitative methodology	Involves the assignment of numbers to objects, events, or observations according to some rule. Instruments with established psychometric properties are used to collect data, and statistical methods are used to analyze data and draw conclusions (Upcraft & Schuh, 2001).
Research	Differs from assessment in that it guides theory development, tests concepts, and has implications that extend beyond a single

	institution. The role of the research investigator is to describe what has been done. In contrast, assessment guides good practice; its implications can rarely be generalized beyond a single institution; and the assessment investigator's role is not only to describe what has been done but what should be done given the findings of the study (Upcraft & Schuh, 2001).
Rubric	A set of categories that define and describe the important components of the work being assessed. Each category contains a gradation of levels of completion or competence with a score assigned to each level and a clear description of what criteria need to be met to attain the score at each level (Ozarka College, n.d.).
Sampling	The method by which a pool of participants is selected from the population of interest.
Stakeholder	Anyone who has a vested interest in our work.

***Table 3*: Descriptions and action words for Bloom's taxonomy of the affective domain**

Level	Description	Action Words
Receiving	Refers to the student's willingness to attend to particular phenomena or stimuli (classroom activities, textbook, music, etc.). Learning outcomes in this area range from the simple awareness that a thing exists to selective attention on the part of the learner.	*asks, chooses, describes, follows, gives, holds, identifies, locates, names, points to, selects, sits erect, replies, uses*
Responding	Refers to active participation on the part of the student. At this level he or she not only attends to a particular phenomenon but also reacts to it in some way. Learning outcomes in this area may emphasize acquiescence in responding (reads assigned material), willingness to respond (voluntarily reads beyond assignment), or satisfaction in responding (reads for pleasure or enjoyment).	*answers, assists, complies, conforms, discusses, greets, helps, labels, performs, practices, presents, reads, recites, reports, selects, tells, writes*

Valuing	Concerned with the worth or value a student attaches to a particular object, phenomenon, or behavior. This ranges in degree from the simpler acceptance of a value (desires to improve group skills) to the more complex level of commitment (assumes responsibility for the effective functioning of the group). Valuing is based on the internalization of a set of specified values, but clues to these values are expressed in the student's overt behavior. Learning outcomes in this area are concerned with behavior that is consistent and stable enough to make the value clearly identifiable.	*completes, describes, differentiates, explains, follows, forms, initiates, invites, joins, justifies, proposes, reads, reports, selects, shares, studies, works*
Organization	Concerned with bringing together different values, resolving conflicts between them, and beginning the building of an internally consistent value system. Thus the emphasis is on comparing, relating, and synthesizing values. Learning outcomes may be concerned with the conceptualization of a value (recognizes the responsibility of each individual for improving human relations) or with the organization of a value system (develops a vocational plan that satisfies his or her need for both economic security and social service).	*adheres, alters, arranges, combines, compares, completes, defends, explains, generalizes, identifies, integrates, modifies, orders, organizes, prepares, relates, synthesizes*
Characterization by Value Set	The individual has a value system that has controlled his	*acts, discriminates, displays, influences,*

	or her behavior for a sufficiently long time for him or her to develop a characteristic "life-style." Thus the behavior is pervasive, consistent, and predictable. Learning outcomes at this level cover a broad range of activities, but the major emphasis is on the fact that the behavior is typical or characteristic of the student.	*listens, modifies, performs, practices, proposes, qualifies, questions, revises, serves, solves, uses, verifies*