

THE WEAKEST (ASSESSMENT) LINK

AKA Closing the Loop



Outcomes

After attendance at workshop,

- participants will be able to discuss ways to use assessment results.
- participants will be able to list several strategies for analyzing assessment data.

Before Collection & Analysis

- Embrace assessment for improvement
- Ask burning questions—ones that faculty/staff care about
- Mock-up results and discuss
 - *Specific? Relevant? Credible? Useful?*
 - *Willing to use the results?*
- Anticipate: What if results fall short of expectations? What might the program do?

Have Data, Now What?

- Analyzing data includes determining how to organize, synthesize, interrelate, compare, and present the assessment results.
- Typically, this process is guided by the assessment questions you have asked and the data that you have collected.
- Results will promote interpretations about pedagogy; the design of curriculum, co-curriculum, and instruction; and educational practices and services

Effective Analytical Strategies

1. Differences:

Do students learn or develop more if they participate in a course or program compared to other students who did not participate?

2. Relationships:

What is the relationship between student assessment outcomes and relevant program indicators (i.e., course grades, peer ratings)?

3. Change:

Do students change over time?

4. Competency:

Do students meet our expectations?

Differences

- Answers the question: Do students learn or develop more if they participate in a course or program compared to other students who did not participate?
- Expected change in student performance resulting from an effective program
- Works equally well for co-curricular programs
- Greater exposure to the “educational program” should result in enhanced performance.
- Determining efficacy of the “treatment”

Difference

Table 1
*Differences in Student Scientific Reasoning Test Scores
by Number of Science-Related Courses Taken*

Science-Related Courses	<i>N</i>	Total Test Score
None	16	52.2
One	131	55.4
Two	201	57.4
Three	251	58.6
Four	145	60.7
Five or more	41	61.4

Note. Total Test Score *SD*=12.9

Relationship

- Answers the question: What is the relationship between student assessment outcomes and relevant program indicators (i.e., course grades, peer ratings)?
- If a course is part of a program requirement, we should expect to see a positive correlation between course outcomes as measured by grades and performance on assessment instrument. (correlations near 0 indicate no relationship, while correlations closer to +1.00 indicate a strong positive relationship)

Relationship

r = correlation coefficient N = number of students (population)

Table 2

Correlations of Scientific Reasoning Test Scores with University Science Course Grades Over a Three-Year Period

Course	Year 1		Year 2		Year 3	
	r	N	r	N	r	N
Physics, Chemistry & the Human Experience	.28	352	.24	370	.20	252
Environment: Earth	.13	130	.29	107	.20	69
Discovering Life	.45	91	.28	76	.37	57
Scientific Perspectives	.15	128	.09	164	.15	109

Change

- Answers the question: Do students change over time?
- Longitudinal approach employing pre-test to post-test assessment
- Provides a baseline with which to compare. Same students assessed 2x

Table 3

Pre- and Post-Scores of Scientific Reasoning Test

	<i>N</i>	<i>SD</i>	Score
Freshmen (Pre)	148	10.2	56.8
Sophomore/Juniors (Post)	148	11.9	62.7

Note. The Freshmen and Sophomore/Juniors groups reflect the same cohort of students at two points in time.

Competency

- Answers the question: Do students meet our expectations?
- Established standards indicate quality
- Demonstrates performance on a common instrument against a common standard
- Standards must be established prior to review of results, not after

Table 4

Percent and Number of Students Meeting Standard on Information Literacy Computer-Based Test

	%	# of students
Met the standard	98	3044

Note. Figures reflect number of freshmen passing all three components of the information technology standards before a specified date.

Evidence

- All of these questions require the use of evidence to answer and to support the analysis.
- The relationship between analytical strategies and the establishment of program goals/objectives/outcomes must be compatible for effective assessment.
- Clearly stating your research question at the outset will ensure that the data you collect and the method by which you assess it are aligned.

Evidence of student learning is used in support of claims or arguments about improvement and accountability told through stories to persuade a specific audience (Jankowski, 2012)

Analyzing and Reporting Results

Possible Patterns of Performance

- Different cohorts—non-traditional aged, traditional-aged students, international students, commuter and residential students, majors in fields of study
- Chronological performance patterns (high and low-achievement based on a common rubric)
- Students' comparative performance patterns on a 1st year assignment & similar 2nd year assignment (case study)
- Patterns from student “think alouds”
- Group interactions or focus groups

Analyzed Results Presentations

- Digital diagrams
- Tables
- Charts
- Graphs
- Spreadsheets
- Maps

Analyzing Qualitative Data

- Coding for themes
- What shows up versus what is missing

Using Results

- Curriculum-related changes
 - *Revise course content or assignments*
 - *Modify frequency or schedule of course offerings*
 - *Add or delete course(s)*
- Resource-related examples
 - *Hire or re-assign faculty and/or staff*
 - *Increase classroom space*
- Academic-process examples
 - *Revise advising standards or process*
 - *Revise admission criteria*
- Program promotion
 - *Communicate quality of student work and student voices to stakeholders*
- Your examples?

Using Assessment Results

- Use Results Fairly, Ethically, and Responsibly
 - *Make assessments planned and purposeful.*
 - *Focus assessments on important learning goals.*
 - *Assess teaching and learning processes*
 - *Actively involve those with a stake in decisions stemming from the results*
 - *Communicate assessment information widely and transparently*
 - *Discourage others from making inappropriate interpretations*
 - *Don't hold people accountable for things they cannot do*
 - *Don't penalize faculty and staff*
 - *Don't let assessment results dictate decisions*
 - *Promote the use of multiple sources of information*
 - *Keep faculty, students, and staff informed*

Using Assessment Results

- Know What You're Looking For
 - *Be clear on why you are performing a particular assessment and what you want to find out.*
- Celebrate Good Assessment Results
- Address Disappointing Assessment Results
- Use Assessment Results to Inform Planning and Resource Allocation

“Assessment per se guarantees nothing by way of improvement no more than a thermometer cures a fever.”

(Marchese, 1987)

References

- Pieper, S.L., Fulcher, K.H., Sundre, D.L., and Erwin, T.D. (2008, Winter). “What do I do with the data now?”: Analyzing assessment information for accountability and improvement. *Research & Practice in Assessment* 3, pp. 4-10.
- Suskie, L. (2009). *Assessing student learning: A common sense guide*. 2nd Ed. San Francisco: Jossey Bass.