

## Student Learning Outcomes Assessment

University of North Texas

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Mary Harrington (ccmary@olemiss.edu)  
Margie Hobbs (margiehobbs@bellsouth.net)

Why Do

# Assessment?

Is it for ...



Is it for ...

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Discover the power of ideas.

It's for YOU:

# TO IMPROVE YOUR PROGRAM

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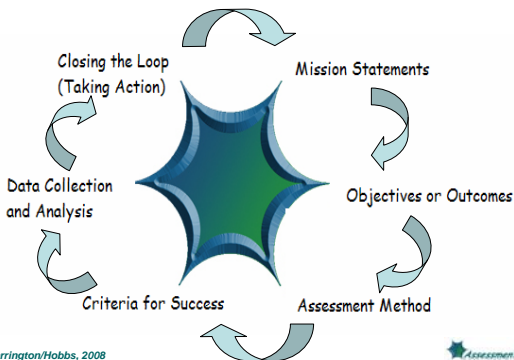
## Today's Agenda

- Six Steps in Assessment
  - Link to Mission
  - Student Learning Outcomes
  - Assessment Methods
  - Criteria for Success (Targets)
  - Data Collection and Analysis
  - Closing the Loop (Taking Action)
- Questions
- Entering Data into TracDat

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## Six Steps in SLO Assessment



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## Six Steps in SLO Assessment

### Planning the Assessment

- Mission Statements
- Student Learning Outcomes
- Assessment Methods
- Criteria for Success

### Implementing the Assessment

- Data Collection and Analysis
- Closing the Loop (Taking Action)

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## I. Mission Statement

- Institutional Mission
  - Provides foundation, role, and scope
  - Overarching guidance
- Institutional Goals
  - Derived from mission
  - Support mission
  - Linkage to implement mission
- Program Mission
  - Derived from institutional mission & goals

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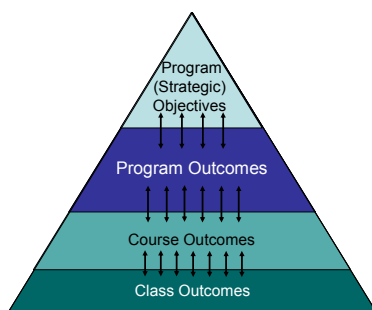
## II. Student Learning Outcomes

- Stated in terms of what students are expected to **know, think, and be able to do** as result of program completion
- Created by program faculty
- Focused on program, not course, level learning
- Choose 3 to 5 per assessment cycle

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## Assessment Mapping



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### Student Learning Outcomes should:

- ✓ Answer the question “What are students expected to know, think or be able to do?” upon completion of program
- ✓ Be clearly and succinctly stated
- ✓ Be under the control or responsibility of the program
- ✓ Be ascertainable/measurable
- ✓ Be actionable (lead to improvements)
- ✓ Lead to results other than “yes/no”

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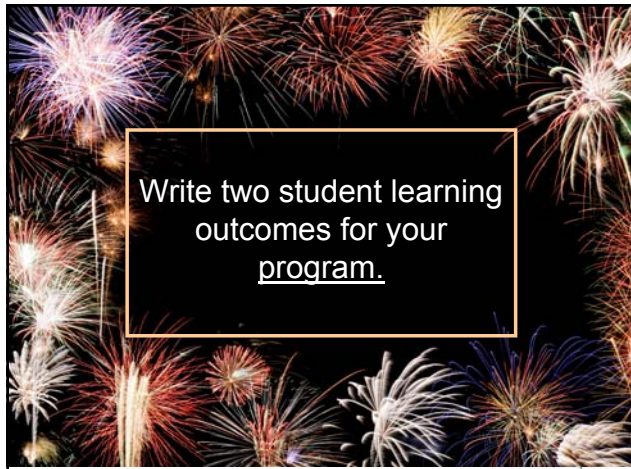
## Introducing Our Example ...

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### Outcome

***Biology graduates will have a foundational knowledge of unifying biological principles in cell structure and function, ecology, evolution, and genetics.***



## III. Means of Assessment

### Means of Assessment should:

- Identify at least two assessment methods
- Be directly related to outcome statement
- Be measurable/ascertainable
- Consider all aspects of the outcome statement
- Provide adequate data for analysis
- Provide actionable data

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*Assessment Tools:*  
*Direct vs. Indirect Assessment*

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## Direct Assessment

- **Based on analysis of student artifacts, performances, or behaviors**
- Assessment *means* include tests, assignments, projects, recitals, performances, portfolios, papers
- Assessment *tools* include item analyses, rubrics, percentiles

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## Indirect Assessment

- **Based on reported *perceptions* of student learning**
- Assessment *means* include attitudinal data from students, alumni, employers, faculty, fieldwork supervisors
- Assessment *tools* include surveys, exit interviews, focus groups
- Appropriate only as **secondary** means of assessment

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## Quantitative vs. Qualitative Assessment Methods

- **Quantitative – Correct or incorrect (multiple choice, T/F, etc.)**
- **Qualitative – Requires judgment**

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## Advantages of Quantitative Assessment

- Test construction is efficient
- May take less time to administer
- Open to easy modification to reflect current curricula
- Scoring straightforward and efficient
- Analyzing data relatively easy
- Normative scores available from standardized tests
- Sub scores may be available from licensure

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## Quantitative Assessment Cautions

- Student knowledge demonstration limited by questions
- Test may lack validity, reliability
- Open to student guessing
- May be too granular for program assessment

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## Advantages of Qualitative Assessment

- Ability to judge “whole” within context
- Flexibility
- Enables student to more comprehensively demonstrate learning
- Can lead to discovery of unexpected findings

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## Qualitative Assessment Cautions

- Identification of and agreement with standards
- Objectivity of evaluation panel
- Consistency and reliability in judgment among evaluators and over time
- Length of time required for analysis and compilation of data
- Concern for blurring between student/faculty work

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## What's with Grades



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## Using Grades or G.P.A as Assessment Methods

- Unit of analysis is individual, not program
- Approximates *portion* of learning each student has, not precisely what each student knows
- May include factors not related to student performance (i.e., attendance, participation)
- Objectivity of evaluator questioned
- **Generally, not accepted as a means of program assessment**

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## Unit of Analysis

For program SLO assessment:

Unit of analysis is  
**LEARNING COMPONENT**  
NOT individual students

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## Using Rubrics

Rubrics provide structure to ensure:

Unit of analysis is  
**LEARNING COMPONENT**  
NOT individual students

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## Why Use Rubrics?

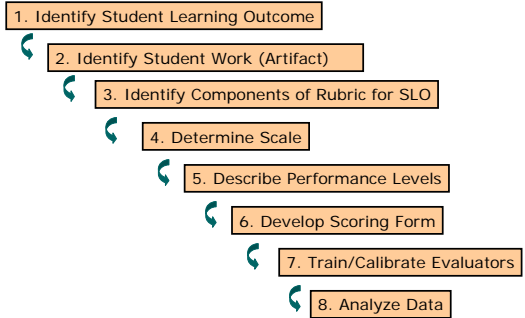
Well-designed rubrics:

- Increase evaluator reliability, reduce bias and increase consistency
- Provide learners with expectations for assignments, promoting self-assessment
- Help faculty clarify goals and identify most salient elements used for evaluation
- Provide rich data that can be used for program assessment and improvement

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## How to Create and Use a Rubric



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## Rubric for Writing

Component	Performance Levels				
	Excellent (5)	Good (4)	Acceptable (3)	Unsatisfactory (2)	Poor (1)
Audience	Gears style and vocabulary for targeted audience	Somewhat gears style and vocabulary for targeted audience	Fluctuates in style and vocabulary	Often uses in appropriate style and vocabulary for audience	Consistently uses style and vocabulary inappropriate for audience
Organization	Logically developed with excellent transitions	Logically developed with some good transitions	Some inconsistency in logical development and transitions	Frequent inconsistency in logical development and transitions	Illogically developed with poor transitions
Research and Documentation of Courses					
Mechanics					

## Individual Student Scores vs. Component Scores - Writing Project

Component	Individual Student Scores					% Student Scores 4 or above
	Student 1	Student 2	Student 3	Student 4	Student 5	
Audience	4	3	1	4	4	60%
Organization	5	2	2	5	3	40%
Research and Documentation of Sources	4	3	2	3	2	20%
Mechanics	5	4	3	4	4	80%
<b>Total</b>	<b>18</b>	<b>12</b>	<b>8</b>	<b>16</b>	<b>13</b>	
<b>Student grade</b>	<b>A</b>	<b>C</b>	<b>D</b>	<b>B</b>	<b>C</b>	

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## Performance Level Descriptors

Excellent	Very Good	Satisfactory	Unsatisfactory	Poor
Always	Most often	Usually	Infrequently	Never
Synthesizes	Analyzes	Applies	Understands	Reports
Creative	Interesting	Neutral	Boring	Inaccurate
Very Original	Original	Somewhat original	Not original	Borrowed
Pleasing		Neutral		Unattractive
Complete	Nearly complete	Missing elements	Mostly incomplete	Very incomplete
Always	Usually	Sometimes	Rarely	Never

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## Assessment Method should ...

- ✓ **Describe student work**  
*Paper, performance, lab report, comprehensive test, project*
- ✓ **Describe evaluation tool(s)**  
*Rubric/scale, item analysis report*
- ✓ **Define from whom or where data will be collected**  
*Course embedded, senior performance, internship, standardized test*
- ✓ **Describe how data will be collected**  
*First attempt, selected questions, elements of portfolio*
- ✓ **Describe data analysis plan**  
*Faculty panel, scoring forms, unit of analysis (learning component, not individual student)*

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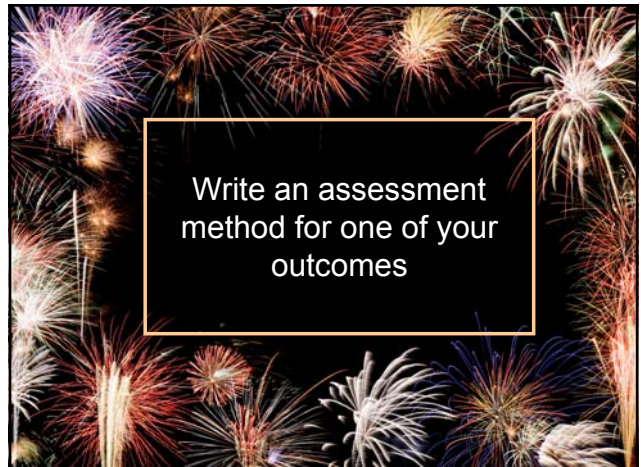
### Assessment Method

Students in BIOL 432 will submit a research project based on cell structure and function.

A faculty panel will use a rubric that has a scale of 1 to 5 (where five is excellent) to assess the six components of the project on its first submission.

Panel scores will be analyzed by each component across all student work.

Write an assessment method for one of your outcomes



## IV. Criteria for Success (Targets)

### Why establish targets?

- Provides standard for determining success
- Puts data analysis in perspective
- Allows program to identify desired performance levels
- Avoid vague words - most, majority, etc.

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### Criteria for Success (Targets) should:

- ✓ Use component (not individual) as unit of analysis
- ✓ Be specific (x% of student scores for each component will be 4 or 5 on a five-point scale)
- ✓ Avoid vague words such as "most" or "majority"
- ✓ Avoid "all" or "100%" targets
- ✓ Relate directly to outcome statement and assessment methodology
- ✓ Identify component and overall target scores

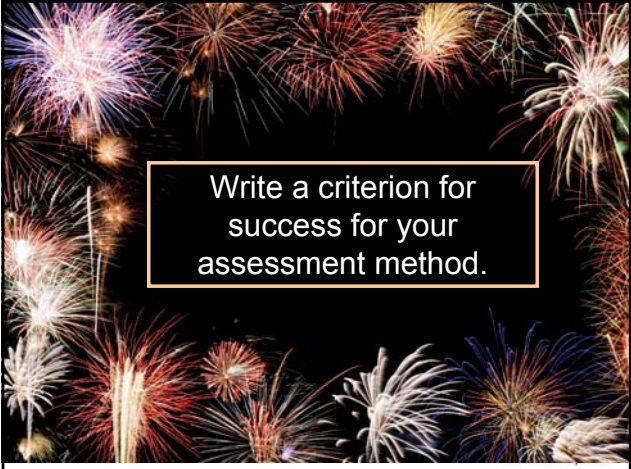
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### Criteria for Success

80% of scores provided by the faculty panel for each of the six elements of the Biology Project Rubric will be 4 (very good) or 5 (excellent).

75% of the overall ratings for the projects will be 4 or 5.

A vibrant background of colorful fireworks exploding in a dark night sky, with various colors including red, orange, yellow, and blue.

Write a criterion for success for your assessment method.

## V. Data Collection and Analysis

- Move from planning the assessment to conducting it
- Keep detailed documentation
- Be candid in your analysis
- Report in detail sufficient to be convincing

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### Data collection and analysis should:

- ✓ Provide detailed data (avoid use “a majority” or “most”)
- ✓ Use specific numbers (avoid rounding)
- ✓ Avoid technical language
- ✓ Directly link to and support outcome statement
- ✓ Be consistent with target
- ✓ Be clearly and succinctly presented
- ✓ Be credible and mathematically possible
- ✓ Support actions taken later to improve program

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### Results

The 24 biology projects were assessed by a three member faculty panel for each of the six components of the rubric and for overall performance. While the complete data table is shown below the summary of scores indicated the criterion was not met for the Methods (62.5%) and Conclusion (66.7%) components of the project.

### Example of Data Collection Description (Biology Project)

Component	# scores 4 or 5	Total # scores	% of 4 or 5 scores
Sources	68	72	94.4%
Methods	45	72	62.5%
Analysis	67	72	83.3%
Conclusion	48	72	66.7%
Organization	59	72	81.9%
Grammar, etc.	62	72	86.1%
Overall	54	72	75.8%

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## VI. Closing the Loop - Taking Action

- Describes actions faculty have taken based on data collected or lessons learned
- If no improvements are necessary, next cycle:
  - Change target or
  - Choose another outcome to assess

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## Examples of Actions Taken

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>• Curriculum revision</li><li>• Course modification</li><li>• Instructional methodology</li><li>• Sequence change</li><li>• Technology update</li></ul> | <ul style="list-style-type: none"><li>• Assessment methodology change</li><li>• Target adjustment</li><li>• Faculty development</li><li>• Procedure, process change</li></ul> |
|---|---|

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### Improvements related to IE should:

- ✓ Address gaps found in assessment results
- ✓ Provide details (specific course number nature of the change)
- ✓ Relate to outcome statement
- ✓ Result from data collected
- ✓ Be substantive, not trivial
- ✓ Be stated in *past* tense
- ✓ Avoid words like "continue," "maintain"

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### Use of Results

Based on the assessment data, faculty have added research projects in BIOL 235 and 364 (both required courses) that emphasize research methods and formulating conclusions.

The faculty have also made revisions to some of the descriptors for performance levels in the rubric used to evaluate the project.



## Assessment Matters!

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## Questions?

Contact:

**Mary Harrington**

[ccmary@olemiss.edu](mailto:ccmary@olemiss.edu)

**Margie Hobbs**

[margiehobbs@bellsouth.net](mailto:margiehobbs@bellsouth.net)



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