

Rubric Essentials

Institutional Effectiveness
Office of Analytics and Institutional
Effectiveness

aie.vt.edu

Presentation Overview

- Rubric Overview
 - Definition, Description, and Use
 - Holistic vs. Analytic Rubrics
 - Analytic Rubric Scoring vs. Grading
 - Advantages and Disadvantages of Analytic Rubrics
- Components of an Analytic Rubric
 - Steps for Creating an Analytic Rubric
 - Norming
 - Using Rubrics in Student Learning Outcome (SLO) Assessment
- Conclusion
 - Example Rubrics
 - Questions and Discussion

Session Outcomes

Participants will be able to:

Define

- What is a rubric?
- Steps associated with creating an analytic rubric

Describe

- How analytic rubric scoring is different than holistic grading/scoring
- How analytic rubrics are used in SLO assessment

Apply

- Example rubrics

Rubric Overview: Definition

A rubric is a **matrix** that describes the specific criteria for an assignment and the performance expectations for each.

A rubric is “a guide listing specific criteria for grading or scoring academic papers, projects, or tests.”

~ Merriam Webster Dictionary

Rubric Overview: Example

Example: Evaluating the Use of Graphics in a Student Presentation

Developed by Information Technology Evaluation
Services, NC Department of Public Instruction

	1	2	3	4
Graphics	Student uses superfluous graphics or no graphics	Student occasionally uses graphics that support text and presentation	Student's graphics relate to text and presentation	Student's graphics explain and reinforce screen text and presentation

Rubric Overview

Rubrics can provide both **summative** and **formative** feedback to students and faculty regarding student learning.

~ Huba and Freed, 2000

Rubric Overview

Rubric Uses:

- **Assess student performance** on specific pieces of student work (e.g., papers, capstone projects, artistic performances, lab reports, design projects, presentations, etc.)
- Are commonly used for **authentic assessment / direct measures of student learning**
- Are for **student work that has dimensionality** and contains more than one learning outcome
- Are **not** for questions that are either correct or incorrect

Rubric Overview

Rubrics can be used by **students** to:

- **Determine** what they need to include / do when completing a specific assignment
- **Evaluate** the quality of their own work prior to turning in an assignment

Rubric Overview

Rubrics can be used by **faculty** to:

- **Outline** the specific components required for an assignment
- **Evaluate** both specific required criteria and provide an overall assignment score
- **Provide** students formative feedback on drafts of an assignment

Rubric Overview

Rubrics can be used by **departments** to:

- **Evaluate** overall programmatic outcomes
- Come to a **consensus** on course requirements when there are multiple instructors teaching different sections

Holistic vs. Analytic Rubrics

Holistic Rubrics:

- Contain performance levels (but do not break out individual assignment criteria)
- Typically used to assign a grade to an assignment
- Provide little formative information for either the program or the student
- Easier to develop, faster to score, and easier to reach consensus on when using multiple raters

Holistic vs. Analytic Rubrics

Analytic Rubrics:

- Allow raters to assess specific components or dimensions of an assignment separately
- Provide detailed feedback to both the student and the program
- Are formative in nature
- Sum of scores can be used as an overall assignment grade
- Can be used to assess a program's SLOs
- Recommended way of designing a rubric for assessment purposes

Analytic Rubric Scoring vs. Grading

Assignment grades give a holistic rating of student performance

For example:

- A student receives a “B” on a capstone paper
- This “rating” is a compilation of all skills exhibited in that project
- This could include synthesis of concepts, adequacy of literature review, quality of writing, etc.

Analytic Rubric Scoring vs. Grading

However, if you use an analytic rubric on an assignment, the specific learning components can be scored individually

For example, a student is rated as:

- “Exceptional” in “synthesis of concepts”
- “Average” on the “adequacy of the literature review”
- And “exceptional” in “writing quality”

Analytic Rubric Scoring vs. Grading

- Each of these areas could be based on different student learning outcomes of either the program or the course
- These scores could then be combined with a point system to give an overall “grade”
- But, separately, each of these scores give an added level of transparency to the evaluation of an assignment

Analytic Rubrics – Students

Advantages

- Give an outline of specific performance criteria for an assignment
- Provide details on how to meet each level of performance
- As a formative measure, give detailed improvement information

Disadvantages

- Students may feel that rubrics limit their creativity

Analytic Rubrics – Faculty

Advantages

- Provide transparency to the evaluation of student performance
- Help teachers clarify assignments / avoid confusing assignments
- Focus on learning
- Used for grading and collecting information on specific SLOs
- Provide common ground for students, faculty, and programs

Disadvantages

- Require time to develop
- Can take more time to evaluate an assignment
- However, could take less time overall if don't need to review assignments multiple times to ensure consistency in grading

Analytic Rubrics – Departments

Advantages

- Standardize performance requirements for courses with multiple sections / instructors
- Highlight the specific criteria that are not being met by students
- Can be used to report assessment findings
- Align teaching and assessment

Disadvantages

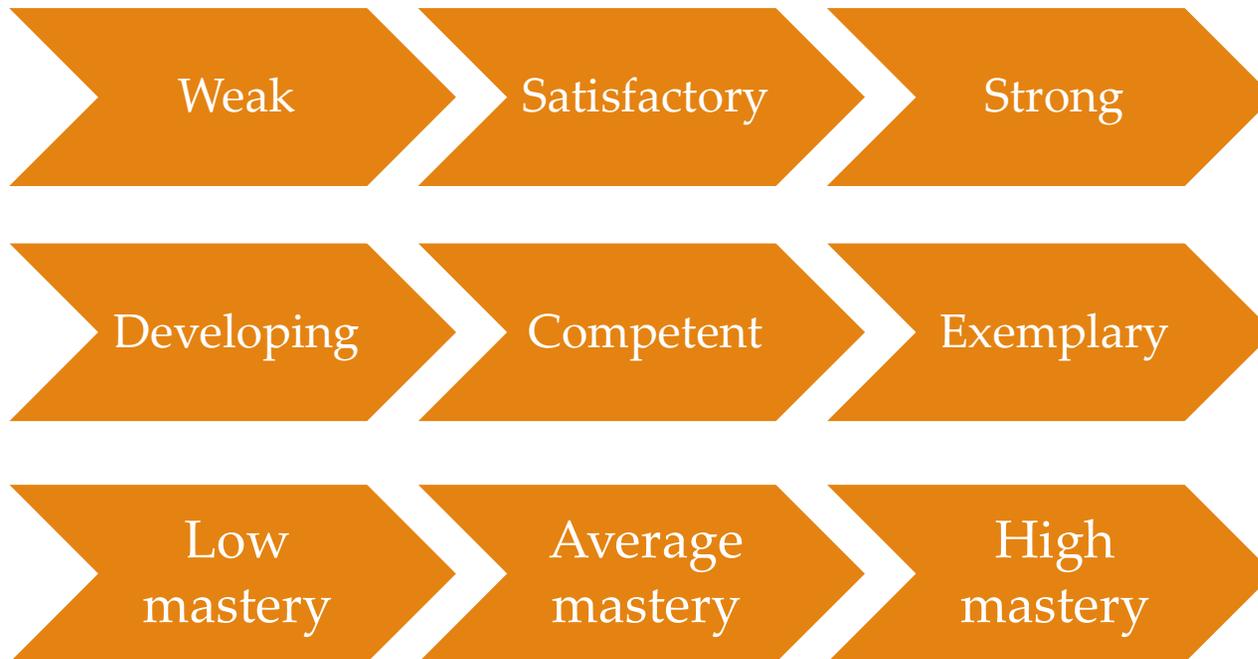
- Take time to develop
- Takes time to come to consensus when using multiple raters (e.g., capstone project assessment)

Creating an Analytic Rubric

- Identify {
 - course or program assignment that will be evaluated with the rubric
- Identify {
 - essential performance elements / criteria the assignment is supposed to cover
- Determine {
 - number of achievement levels that should be included
- Write {
 - specific performance criteria for each of the levels
- Determine {
 - qualitatively, what would performance at each level look like?
- Share {
 - with others
- Revise {
 - as needed

Rubric Scales

Three level scale examples:



Rubric Scales

Four level scale examples:



Rubric Scales

Five level scale examples:



Resources for Creating Analytic Rubrics

Search the web

- Hundreds, if not thousands, of rubrics are available on the internet

Once developed, evaluate the rubric on several criteria:

- Are all student learning outcomes covered by the assignment included?
- Are the categories / performance criteria well-defined?
- Is there adequate distinction between the different categories?
- Is the rubric feasible or practical to use?
- Would external scorers be able to effectively use the rubric?
- Example: Rubric to evaluate rubrics

Norming

When multiple individuals will be using a rubric to evaluate student performance it is good practice to “norm” the rubric

Norming helps:

- Develop consistency in evaluation across multiple raters
- Allow for common understanding of what each performance level means and what student work looks like at each level
- Highlight any problems with the rubric itself

Norming

Steps:

- Bring raters together.
- Discuss the rubric levels for each criterion.
- Have raters independently rate some examples of student work.
- Discuss the scoring across the raters.
- Determine what “consensus” means for your project (e.g., 1 point difference, no differences, etc.). This is also determined by the number of levels you have.
- Continue to rate and discuss until you meet your consensus threshold.
- If consensus can't be achieved, potentially alter rubric or performance levels.

Analytic Rubrics in SLO Assessment

Rubrics are often used in student learning outcomes assessment

Developing rubrics takes time; rubrics often need to be revised

Rubrics allow departments to use the same piece of student work to examine multiple student learning outcomes

Analytic Rubrics in SLO Assessment

Grades do not give the level of detail needed to understand all of the student learning outcomes that are included in a course assignment

An overall assignment score is not a direct measure of student learning on a specific student learning outcome. However, when criteria are linked to rubric rows these ratings are specific enough to be direct measures of student learning.

Example – SLO Matching

The Chemical Engineering BS program has a capstone course that requires students to complete a research project and present their findings. The program would like to use this capstone project to assess several of its student learning outcomes.

SLOs: Students completing the BS program in Chemical Engineering will be able to:

- Apply concepts and governing equations to solve rate and / or equilibrium problems
- Solve math models to analyze or evaluate process / system performance
- Choose the optimal solution based on evaluation of technical and economic criteria
- Communicate effectively in writing

Reliability and Validity

Well-designed rubrics increase an assessment's **reliability** by setting criteria that raters can apply consistently and objectively.

Well-designed rubrics increase an assessment's **construct and content validity** by aligning evaluation criteria to standards, curriculum, and instruction tasks.

Reflection

Rubrics can help us to **reflect** before we **react** to our work

“We are being pummeled by a deluge of data and unless we create time and spaces in which to reflect, we will be left with only our reactions.”

~ Rebecca Blood

Questions and Discussion

For more information and resources,
visit aie.vt.edu