Rubrics are developed to assist faculty in rating qualities of learning outcomes. When provided to students before and during learning, rubrics also assist students the ability to more successfully interpret and anticipate expected levels of performance. Therefore, rubrics effectively help teachers to specifically and consistently assess and evaluate qualities of learning and communicate expected standards of learning, and help students interpret their own level of performance, learn what must be done to improve performance and achieve higher standards of performance.

**Rubric Definition:**

A rubric is a measurement tool that describes the criteria against which a performance, behavior, or product is compared and measured. They list the criteria established for a particular task and the levels of achievement associated with each criterion. Often developed in the form of a matrix. There are two types of rubrics: holistic and analytic.

- **Holistic Rubric:** ask the evaluator to make a single judgment about the object or behavior being evaluated. Each possible score is accompanied by a statement that describes performance at that level. Although the description will refer to special characteristics of interest, these characteristics are not scored separately.
  - Advantages: quick scoring, provides an overview of student achievement, efficient for large group scoring
  - Disadvantages: does not provide detailed information; may be difficult for scorers to decide on one overall score
  - Use when:
    - You want a quick snapshot of achievement
    - A single dimension is adequate to define quality
  - Please see an example of a holistic rubric:

<table>
<thead>
<tr>
<th>Student Essay Rubric (Holistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sophisticated</strong></td>
</tr>
<tr>
<td><strong>Acceptable</strong></td>
</tr>
<tr>
<td><strong>Developing Competence</strong></td>
</tr>
<tr>
<td><strong>Inadequate</strong></td>
</tr>
</tbody>
</table>

- **Analytic Rubric:** are used to assess multiple outcomes simultaneously or for multi-dimensional outcomes and each dimension needs to be rated separately, resulting in multiple judgments about an object or performance. For each characteristic, a three- to five-point scoring scale is developed with explicit statements to describe performance of each level. This type of rubric is more commonly used to measure student learning.
Writing Effective Rubrics

- Advantages: provides more detailed feedback on student performance; scoring more consistent across student and raters
- Disadvantages: more time consuming than using a holistic rubric
- Use when
  - You want to see strengths and weaknesses
  - You want detailed feedback about student performance
- Please see an example of an analytic rubric:

<table>
<thead>
<tr>
<th>Topic (Weight)</th>
<th>1-Unacceptable</th>
<th>2-Marginal</th>
<th>3-Proficient</th>
<th>4-Exceptional</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Problem and Boundaries (1)</td>
<td>Little or no grasp of problem. Incapable of producing a successful solution.</td>
<td>Some understanding of problem. Major deficiencies that will impact the quality of solution.</td>
<td>Overall sound understanding of the problem and constraints. Does not significantly impair solution.</td>
<td>Clear and complete understanding of design goal and constraints.</td>
<td></td>
</tr>
<tr>
<td>Alternative Designs (2)</td>
<td>Only one design presented or clearly infeasible alternative given.</td>
<td>Serious deficiencies in exploring and identifying alternative designs.</td>
<td>Alternative approaches identified to some degree.</td>
<td>Final design achieved after review of reasonable alternatives.</td>
<td></td>
</tr>
<tr>
<td>Use of Computer–Aided Tools (2)</td>
<td>Serious deficiencies in understanding the correct selection and/or use of tools.</td>
<td>Minimal application and use of appropriate tools.</td>
<td>Computer–aided tools used with moderate effectiveness to develop designs.</td>
<td>Computer–aided tools are used effectively to develop and analyze designs.</td>
<td></td>
</tr>
<tr>
<td>Application of Engineering Principles (2)</td>
<td>No or erroneous application of engineering principles yielding unreasonable solution.</td>
<td>Serious deficiencies in proper selection and use of engineering principles.</td>
<td>Effective application of engineering principles resulting in reasonable solution.</td>
<td>Critical selection and application of engineering principles ensuring reasonable results.</td>
<td></td>
</tr>
<tr>
<td>Final Design (3)</td>
<td>Not capable of achieving desired objectives.</td>
<td>Barely capable of achieving desired objectives.</td>
<td>Design meets desired objectives.</td>
<td>Design meets or exceeds desired objectives.</td>
<td></td>
</tr>
</tbody>
</table>
Writing Effective Rubrics

Why use a Rubric?

- A rubric creates a common framework and language for assessment.
- Complex products or behaviors can be examined efficiently.
- Well-trained reviewers apply the same criteria and standards.
- Rubrics are criterion-referenced, rather than norm referenced. Raters ask, “Did the student meet the criteria for level 5 of the rubric?” rather than “How well did this student compare to other students?”
- Using rubrics can lead to substantive conversations among faculty.
- When faculty members collaborate to develop a rubric, it promotes shared expectations and grading practices.
- Rubrics help clarify expectations you and others have for student

Faculty members can use rubrics for program assessment. Examples:

- The English Department collected essays from students in all sections of English 100. A random sample of essays was selected. A team of faculty members evaluated the essays by applying an analytic scoring rubric. Before applying the rubric, they "normed"--that is, they agreed on how to apply the rubric by scoring the same set of essays and discussing them until consensus was reached (see document: "Norming a rubric”)
- Biology laboratory instructors agreed to use a "Biology Lab Report Rubric" to grade students' lab reports in all Biology lab sections, from 100- to 400-level. At the beginning of each semester, instructors met and discussed sample lab reports. They agreed on how to apply the rubric and their expectations for an "A," "B," "C," etc., report in 100-level, 200-level, and 300- and 400-level lab sections. Every other year, a random sample of students' lab reports are selected from 300- and 400-level sections. Each of those reports are then scored by a Biology professor. The score given by the course instructor is compared to the score given by the Biology professor. In addition, the scores are reported as part of the program's assessment report. In this way, the program determines how well it is meeting its outcome, "Students will be able to write biology laboratory reports."

What are the parts of a rubric?

Rubrics are composed of four basic parts. In its simplest form, the rubric includes:

1. **A task description.** The outcome being assessed or instructions students received for an assignment.
2. **The characteristics to be rated (rows).** The skills, knowledge, and/or behavior to be demonstrated.
3. **Levels of mastery/scale (columns).** Labels used to describe the levels of mastery should be tactful and clear. Commonly used labels include:

<table>
<thead>
<tr>
<th>Not meeting</th>
<th>Approaching</th>
<th>Meeting</th>
<th>Exceeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unacceptable</td>
<td>Marginal</td>
<td>Proficient</td>
<td>Exemplary</td>
</tr>
<tr>
<td>Novice</td>
<td>Intermediate</td>
<td>Intermediate high</td>
<td>Advanced</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

4. **A description of each characteristic at each level of mastery/scale (cells).**
Writing Effective Rubrics

Developing a Rubric

Step 1: Identify what you want to assess (Select the learning outcome from your program)

Step 2: Identify the characteristics to be rated (rows). These are also called "dimensions."

- Specify the skills, knowledge, and/or behaviors that you will be looking for.
- Limit the characteristics to those that are most important to the assessment.

Step 3: Identify the levels of mastery/scale (columns).

Tip: Aim for an even number (4 or 6) because when an odd number is used, the middle tends to become the "catch-all" category.

Step 4: Describe each level of mastery for each characteristic/dimension (cells).

- Describe the best work you could expect using these characteristics. This describes the top category.
- Describe an unacceptable product. This describes the lowest category.
- Develop descriptions of intermediate-level products for intermediate categories.

Important: Each description and each characteristic should be mutually exclusive.

Step 5: Test rubric.

- Apply the rubric to an assignment.
- Share with colleagues.

Tip: Faculty members often find it useful to establish the minimum score needed for the student work to be deemed passable. For example, faculty members may decide that a "1" or "2" on a 4-point scale (4=exemplary, 3=proficient, 2=marginal, 1=unacceptable), does not meet the minimum quality expectations. They may set their criteria for success as 90% of the students must score 3 or higher. If assessment study results fall short, action will need to be taken.

Step 6: Discuss with colleagues. Review feedback and revise.

Important: When developing a rubric for program assessment, enlist the help of colleagues. Rubrics promote shared expectations and consistent grading practices which benefit faculty members and students in the program.

Suggestions For Using Rubrics In Course

Use the rubric to grade student work. Hand out the rubric with the assignment so students will know your expectations and how they'll be graded. This should help students master your learning outcomes by guiding their work in appropriate directions.

- Use a rubric for grading student work and return the rubric with the grading on it. Faculty save time writing extensive comments; they just circle or highlight relevant segments of the rubric. Some faculty members include room for additional comments on the rubric page, either within each section or at the end.
Writing Effective Rubrics

- Develop a rubric with your students for an assignment or group project. Students can the monitor themselves and their peers using agreed-upon criteria that they helped develop. Many faculty members find that students will create higher standards for themselves than faculty members would impose on them.
- Have students apply your rubric to sample products before they create their own. Faculty members report that students are quite accurate when doing this, and this process should help them evaluate their own projects as they are being developed. The ability to evaluate, edit, and improve draft documents is an important skill.
- Have students exchange paper drafts and give peer feedback using the rubric. Then, give students a few days to revise before submitting the final draft to you. You might also require that they turn in the draft and peer-scored rubric with their final paper.
- Have students self-assess their products using the rubric and hand in their self-assessment with the product; then, faculty members and students can compare self- and faculty-generated evaluations.

Tips for developing a rubric

- Find and adapt an existing rubric! It is rare to find a rubric that is exactly right for your situation, but you can adapt an already existing rubric that has worked well for others and save a great deal of time. A faculty member in your program may already have a good one.
- Evaluate the rubric. Ask yourself: A) Does the rubric relate to the outcome(s) being assessed? (If yes, success!) B) Does it address anything extraneous? (If yes, delete.) C) Is the rubric useful, feasible, manageable, and practical? (If yes, find multiple ways to use the rubric: program assessment, assignment grading, peer review, student self-assessment.)
- Collect samples of student work that exemplify each point on the scale or level. A rubric will not be meaningful to students or colleagues until the anchors/benchmarks/exemplars are available.
- Expect to revise.
- When you have a good rubric, SHARE IT!

REFERENCES


