Analyzing and Using Rubric Data to Optimize Student Learning and Norming and Reconciling for Program Assessment

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Program Assessment Process

Select or develop measurable student learning outcomes

Make adjustments in curriculum and/or teaching and learning strategies to address weaknesses and strengths

Analyse assessment results

Measure student learning outcomes

Identify classes, instructional strategies, assignments, and activities to foster outcomes

Select or develop measures that are able to provide information about outcome achievement and progress
Rubrics
Beneficial for assessment and instructional purposes

Assessment

- Summative
  - achievement of outcomes
- Formative
  - progress toward outcomes, strengths and weaknesses
  - Often both
Rubrics for Instructional Purposes

- Communicating expectations
- Responding to areas needing attention (learning weaknesses)
- Guiding peer review
- Using for self-evaluation
Rubrics

Consist of:

• Criteria used to evaluate performance – reflect the details of learning outcomes or details of assignment

• Levels to describe potential range of performance
Questions to Guide the Development of Useful Rubrics

1. What features or outcome components will you be looking for in students’ work (to define quality work and outcome achievement)?

2. How many levels do you need to show students how you will evaluate their work?
   - Exceptional, Competent, Marginal, Unacceptable
   - Levels 1-5

3. For each quality in #1, what is a clear description of performance at each level in #2?
   - Performance levels will vary more for program level assessment

Based on Huba & Freed, 2000
Questions to Guide the Development of Rubrics

4. What are the potential consequences of performing at each level of the rubric?

5. How much weight will you give for each trait and performance level (equal or variable)?

6. After using the rubric, what revisions need to be made?

Based on Huba and Freed, 2000
Guidelines for Developing Traits and Rubrics

• Level of specificity of each rubric trait/component depends on assignment, weight, use (what information is needed to determine competence or proficiency).

• Traits are nouns, e.g. quality of details.

• Rubrics describe rather than direct. “Details provide,” not “details should provide.”

• Number of levels: depends on how finely levels can be discriminated. It is unnecessary to have the same number for each trait. Stop adding levels when the distinctions are meaningless or very difficult to determine.

Guidelines for Developing Traits and Rubrics Continued

• Relationships among levels
  • Related but additive – subtractive
  • Distinctly different – ex. Bloom’s Taxonomy levels

• Description of levels: Be as objective and concrete as possible; try to avoid words such as “adequate,” “appropriate,” and “good” unless commonly known – depends on who will score. Can use examples to explain.

Checklist for a Quality Rubric

• Rubric Categories: Do the categories accurately reflect outcome components?

• Levels: Are there distinct levels which are assigned names and point values and reflect an adequate amount of variation?

• Criteria: Are the descriptions for each level of performance clear for both students and faculty? Are the levels consistent across criteria, with mostly equidistance between each?
Quality Rubric

• Validity: Does the rubric clearly and sufficiently reflect the outcome and assignment expectations? Can it be used for your assessment purposes (summative and/or formative)?

• Reliability: Will different faculty evaluate students’ products similarly? Will product be evaluated similarly over time?
## Creating an Analytic Rubric

<table>
<thead>
<tr>
<th>Rubric Criteria</th>
<th>Levels of Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Description of the level</td>
</tr>
<tr>
<td>a.</td>
<td>Description of the criterion</td>
</tr>
<tr>
<td>b.</td>
<td>Description of the criterion</td>
</tr>
</tbody>
</table>
Using Rubric Scores

Grading
How much weight will be given to each trait?

Assessment/Instruction
Is performance lower for some traits?
Are appropriate expectations established?
## Using Analytic Rubric Results to Identify Strengths and Weaknesses

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Total</th>
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<td>3.5</td>
<td>2.5</td>
<td>3</td>
<td>2</td>
<td>1.5</td>
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<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>25</td>
</tr>
<tr>
<td><strong>Audience</strong></td>
<td>2.5</td>
<td>3</td>
<td>2</td>
<td>2.5</td>
<td>2.5</td>
<td>2</td>
<td>1.5</td>
<td>3</td>
<td>1.5</td>
<td>2.5</td>
<td>23</td>
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<tr>
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<td>2.5</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2.5</td>
<td>2</td>
<td>1.5</td>
<td>2</td>
<td>1.5</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td><strong>Quality of Details</strong></td>
<td>2.5</td>
<td>2.5</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2.5</td>
<td>3</td>
<td>3.5</td>
<td>3</td>
<td>28</td>
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<tr>
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<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1.5</td>
<td>2</td>
<td>2.5</td>
<td>1.5</td>
<td>3</td>
<td>20</td>
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</table>
Communication Skills Results for Students in Sophomore Level Classes

<table>
<thead>
<tr>
<th>Element</th>
<th>Mean</th>
<th>3.5 and above</th>
<th>Below 2.5</th>
<th>3 and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>All assignment requirements are fulfilled</td>
<td>3.15</td>
<td>20%</td>
<td>0%</td>
<td>80%</td>
</tr>
<tr>
<td>Appropriate audience(s) is (are) consistently addressed</td>
<td>2.8</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Reasoning supports the main idea</td>
<td>2.7</td>
<td>40%</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Details are sufficient in quality to develop the main idea</td>
<td>3.15</td>
<td>40%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Details are sufficient in quantity to develop the main idea</td>
<td>3.25</td>
<td>60%</td>
<td>20%</td>
<td>60%</td>
</tr>
</tbody>
</table>
# Results of Course Assessment

## Fall 2015 Literature Review: Assignment 1

<table>
<thead>
<tr>
<th>Trait/Levels</th>
<th>Exceptional (5)</th>
<th>Proficient (4)</th>
<th>Developing (3)</th>
<th>Beginning (2)</th>
<th>Unacceptable (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>0.0%</td>
<td>3.1%</td>
<td>37.5%</td>
<td>53.1%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Support of Rationale</td>
<td>0.0%</td>
<td>6.3%</td>
<td>46.8%</td>
<td>46.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Quality of Details/Evidence</td>
<td>0.0%</td>
<td>6.3%</td>
<td>62.5%</td>
<td>31.3%</td>
<td>0.0%</td>
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<tr>
<td>Introduction</td>
<td>0.0%</td>
<td>0.0%</td>
<td>53.1%</td>
<td>40.6%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Discussion/Conclusion</td>
<td>0.0%</td>
<td>0.0%</td>
<td>50.0%</td>
<td>43.8%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Audience Awareness</td>
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<td>0.0%</td>
<td>6.3%</td>
<td>87.5%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Format &amp; Mechanics</td>
<td>0.0%</td>
<td>6.3%</td>
<td>56.3%</td>
<td>37.5%</td>
<td>0.0%</td>
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</tbody>
</table>
# Results of Course Assessment

## Spring 2016 Literature Review: Assignment 1

<table>
<thead>
<tr>
<th>Trait/Levels</th>
<th>Exceptional (5)</th>
<th>4.5</th>
<th>Proficient (4)</th>
<th>3.5</th>
<th>Developing (3)</th>
<th>Beginning (2)</th>
<th>Unacceptable (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.5%</td>
<td>7.5%</td>
<td>25.0%</td>
<td>57.5%</td>
<td>7.5%</td>
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<tr>
<td><strong>Support of Rationale</strong></td>
<td>0.0%</td>
<td>0.0%</td>
<td>7.5%</td>
<td>15.0%</td>
<td>37.5%</td>
<td>40.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Quality of Details/Evidence</strong></td>
<td>0.0%</td>
<td>2.5%</td>
<td>5.0%</td>
<td>20.0%</td>
<td>52.5%</td>
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<tr>
<td><strong>Introduction</strong></td>
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<td>5.0%</td>
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<tr>
<td><strong>Discussion/Conclusion</strong></td>
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<td>15.0%</td>
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<td><strong>Audience Awareness</strong></td>
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<td>2.5%</td>
<td>25.0%</td>
<td>57.5%</td>
<td>15.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
Analyzing Rubric Results

When rubric traits align with more than one outcome

• Report findings separately for each outcome
• Assessment plans and reports are organized by outcomes
Using Rubrics for Program Assessment: Guidelines

- Use appropriate sampling technique to select credible sample size
- Should have two faculty members apply rubric to each student artifact
- In preparation for scoring, have a calibration/norming session
  - Review rubric for consistent interpretation
  - Have all faculty members participate and score 2 or 3 student artifacts
Using Rubrics for Program Assessment: Guidelines

- Calibration/Norming Continued
  - Discuss scoring discrepancies greater than 1 point
    - determine if misapplying the rubric or if there is a problem with the rubric itself
    - Emphasize the importance of following the language in the rubric—"leave biases at home."
Rubrics References


• http://www2.acs.ncsu.edu/UPA/assmt/resource.htm

• http://www.winona.edu/air/rubrics.htm