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Sample Rubrics for Evaluating Student Classroom Work

The best way to explain a rubric is to show one. Glance over the following examples. A rubric, for our purposes, is a matrix that explicitly states the criteria and standards for student work. It identifies the traits that are important (“research design” or “originality”) and describes levels of performance within each of the traits. A rubric may lead to a grade or be part of the grading process. However, it is more specific, detailed, and disaggregated than a grade. Thus it can show strengths and weaknesses in student work.

Teachers can construct rubrics for their students’ work. Some of the language for the rubric can be found in the teacher’s assignment, stated grading criteria, comments on students’ papers, or handouts intended to help students complete an assignment. If the teacher wants an outside view, she can ask one or more colleagues to use the rubric independently to score student work.

The rubric can be shared with students before they begin work on the assignment, so they will know the criteria on which they will be evaluated, learn the qualities of good work in the field, and consciously strive for those qualities.

For other examples of rubrics in various disciplines, see Barbara Walvoord and Virginia Anderson, *Effective Grading: A Tool for Learning and Assessment* (Jossey-Bass, 1998).

Rubric Showing Criteria for Biology Research Reports* _____

Assignment: Semester-long assignment to design an original experiment, carry it out, and write it up in scientific report format.

The teacher identifies these aspects to measure:

Title

Introduction

Scientific Format

Materials and Methods

Nonexperimental Information

Experimental Design

Operational Definitions

Control of Variables

Data Collection and Display

Interpretation of Data

Under each, she constructs a scale describing levels of student performance. Examples:

Methods and Materials Section

- 5 Report contains effective, quantifiable, concisely organized information that allows the experiment to be replicated; is written so that all information inherent to the document can be related back to this section; identifies sources of all data to be collected; identifies sequential information in an appropriate chronology; does not contain unnecessary, wordy descriptions of procedures.
- 4 As 5 above, but report contains unnecessary information and/or wordy descriptions within the section.
- 3 Report presents an experiment that is definitely replicable; all information in document may be related to this section; however, fails to identify some sources of data and/or presents sequential information in a disorganized, difficult pattern.
- 2 Report presents an experiment that is marginally replicable; parts of the basic design must be inferred by the reader; procedures not quantitatively described; some information in Results or Conclusions cannot be anticipated by reading the Methods and Materials section.
- 1 Report describes the experiment so poorly or in such a nonscientific way that it cannot be replicated.

*By Virginia Anderson, Department of Biology, Towson University, Towson, Maryland.

Controlling Variables

- 5 Student demonstrates, by written statement, the ability to control variables by experimental control and by randomization; student makes reference to, or implies, factors to be disregarded by reference to pilot or experience; superior overall control of variables.
- 4 As 5 above, but student demonstrates an adequate control of variables.
- 3 Student demonstrates the ability to control important variables experimentally; Methods and Materials section does not indicate knowledge of randomization and/or selected disregard of variables.
- 2 Student demonstrates the ability to control some, but not all, of the important variables experimentally.
- 1 Student demonstrates a lack of understanding about controlling variables.

Collecting Data and Communicating Results

- 5 Student selects quantifiable experimental factors and/or defines and establishes quantitative units of comparison; measures the quantifiable factors and/or units in appropriate quantities or intervals; student selects appropriate statistical information to be utilized in the results; when effective, student displays results in graphs with correctly labeled axes; data are presented to the reader in text as well as graphic forms; tables or graphs have self-contained headings.
- 4 As 5 above, but the student did not prepare self-contained headings for tables or graphs.
- 3 As 4 above, but data reported in graphs or tables contain materials that are irrelevant and/or not statistically appropriate.
- 2 Student selects quantifiable experimental factors and/or defines and establishes quantitative units of comparison; fails to select appropriate quantities or intervals and/or fails to display information graphically when appropriate.
- 1 Student does not select, collect, and/or communicate quantifiable results.

Interpreting Data: Drawing Conclusions/Implications

- 5 Student summarizes the purpose and findings of the research; student draws inferences that are consistent with the data and scientific reasoning and relates these to interested audiences; student explains expected results and offers explanations and/or suggestions for further research for unexpected results; student presents data

Table A.1. Sample Data

<i>Trait</i>	<i>Class Mean, Year #1</i>	<i>Class Mean, Year #2</i>
Title	2.95	3.22
Introduction	3.18	3.64
Scientific Format	3.09	3.32
Methods and Materials	3.00	3.55
Nonexperimental Information	3.18	3.50
Designing the Experiment	2.68	3.32
Defining Operationally	2.68	3.50
Controlling Variables	2.73	3.18
Collecting Data	2.86	3.36
Interpreting Data	2.90	3.59
Overall	2.93	3.42

honestly, distinguishes between fact and implication, and avoids overgeneralizing; student organizes nonexperimental information to support conclusion; student accepts or rejects the hypothesis.

- 4 As 5 above, but student does not accept or reject the hypothesis.
- 3 As 4 above, but the student overgeneralizes and/or fails to organize nonexperimental information to support conclusions.
- 2 Student summarizes the purpose and findings of the research; student explains expected results, but ignores unexpected results.
- 1 Student may or may not summarize the results, but fails to interpret their significance to interested audiences.

Rubric Showing Criteria for Writing Assignment in Economics 101*

Assignment: For your employer, a congresswoman, research and analyze a proposed law to raise the minimum wage.

*By Philip Way, Department of Economics, University of Cincinnati.

Executive Summary

- 5 Clearly states the position of the researcher; summarizes the main reasons for this conclusion.
- 4 Clearly states the position of the researcher; provides some information as to why this conclusion was reached.
- 3 Clearly states the position of the researcher.
- 2 Position of the researcher is present in the summary, but must be identified by the reader.
- 1 Fails to identify the position of the researcher.

Criteria

- 3 Student clearly (correctly) defines the criteria used to assess the implications of the research question.
- 2 Student provides definitions of the criteria used to assess the implications of the research question, but the presentation is unclear or at least one definition is not factually correct.
- 1 Student fails to correctly define criteria used.

Relative Weighting of the Criteria

- 3 Student indicates the relative weighting (importance) of the criteria.
- 2 Student's weighting scheme, although present, is unclear.
- 1 Student fails to identify the relative weighting (importance) of the criteria.

Production Possibility Diagram

- 5 Student clearly presents and fully explains the impact of the proposed change in terms of a production possibility frontier (PPF) diagram. Graph is appropriately drawn and labeled. Discussion is in terms of identified criteria.
- 4 Student presents and explains the impact of the proposed change in terms of a PPF diagram. Either the explanation or the graph is less than clear, although they do not contain factual errors.
- 3 Student presents and explains the impact of the proposed change in terms of a PPF diagram, although presentation contains some factual errors.
- 2 Student presents and explains the impact of the proposed change in terms of a PPF diagram. Presentation contains serious factual errors.
- 1 Student does not present the impact of the proposed change in terms of a PPF diagram.

Supply and Demand Diagram

- 5 Student clearly presents and fully explains the impact of the proposed change in terms of a supply and demand

diagram. Graph is appropriately drawn and labeled. Discussion is in terms of identified criteria.

- 4 Student presents and explains the impact of the proposed change in terms of a supply and demand diagram. Either the explanation or the graph is less than clear, although they do not contain factual errors.
- 3 Student presents and explains the impact of the proposed change in terms of a supply and demand diagram, although presentation contains some factual errors.
- 2 Student presents and explains the impact of the proposed change in terms of a supply and demand diagram. Presentation contains serious factual errors.
- 1 Student does not present the impact of the proposed change in terms of a supply and demand diagram.

Production Costs/Supply Diagram

- 5 Student clearly presents and fully explains the impact of the proposed change in terms of a production costs/supply diagram. Graph is appropriately drawn and labeled. Discussion is in terms of identified criteria.
- 4 Student presents and explains the impact of the proposed change in terms of a supply and demand production costs/supply diagram. Either the explanation or the graph is less than clear, although they do not contain factual errors.
- 3 Student presents and explains the impact of the proposed change in terms of a production costs/supply diagram, although presentation contains some factual errors.
- 2 Student presents and explains the impact of the proposed change in terms of a production costs/supply diagram. Presentation contains serious factual errors.
- 1 Student does not present the impact of the proposed change in terms of a production costs/supply diagram.

Supporting Data

- 5 Student provides an analysis of economic data that support the student's position. Quantitative and qualitative information concerning the effect of the increase are presented accurately; differences of opinion are noted where they exist.
- 4 Student provides an analysis of economic data that support the student's position. Either quantitative *or* qualitative information concerning the effect of the increase is presented accurately; differences of opinion are noted where they exist.

- 3 Student provides an analysis of economic data that support his or her position. However, the discussion is unclear or contains some factual errors.
- 2 Student provides an analysis of economic data that support the student's position. However, the discussion is very unclear or contains serious factual errors.
- 1 Student fails to provide an analysis of economic data that supports the student's position.

Integration

- 3 Student provides a clear link between the theoretical and empirical analyses and the assessment criteria.
- 2 Student provides some link between the theoretical and empirical analyses and the assessment criteria.
- 1 Student does not provide a link between the theoretical and empirical analyses and the assessment criteria.

Conclusions

- 3 Student's conclusion is fully consistent with his or her analysis.
- 2 Student's conclusion is generally consistent with his or her analysis.
- 1 Student's conclusion is not consistent with his or her analysis.

Original Thought

- 3 Paper shows evidence of original thought: that is, analysis is not simply a summary of others' opinions or analyses, but rather an evaluation of the proposals in light of the criteria and weighting scheme chosen by the student.
- 2 Paper shows some evidence of original thought but is mostly a summary of others' opinions or analyses, rather than an evaluation of the proposals in light of the criteria and weighting scheme chosen by the student.
- 1 Student's paper fails to show evidence of original thought.

Miscellaneous

- 5 Student appropriately cites sources. The paper is typewritten, neat, and easy to read.
- 4 The student's paper is generally professional and includes citations; however, it contains minor stylistic errors.
- 3 The paper is legible and includes some citations. However, it contains serious stylistic errors.

- 2 The student's paper lacks citations, is sloppy, or is otherwise unprofessional.
- 1 The student's work is not professionally presented.

Rubric Showing Criteria for a Take-Home Essay Exam in Literature*

Assignment: This take-home exam asked students to take a position on a debatable issue concerning the interpretation of the literature they had studied.

Position

- 5 Student takes a defensible position on the issue posed in the exam question and states the position clearly. Position does not merely state the obvious or parrot one of the readings, but shows a creative mind at work.
- 4 Student takes a defensible position on the issue posed in the exam and states the position clearly. Position may be somewhat obvious or closely parallel one of the readings.
- 3 Student takes a defensible position on the issue posed in the exam and states the position clearly, but the position may state the obvious or simply paraphrase one of the readings.
- 2 Student takes a defensible position on the issue posed in the exam, but the statement is ambiguous, carelessly stated, or must be inferred.
- 1 Student does not clearly state a defensible position, or position is not defensible, or position is irrelevant to the question posed in the exam.

Support

- 5 Support for the position is imaginative, thorough, relevant, and clearly stated. Shows a thorough knowledge of the readings and ability to use material from readings as evidence. Evidence is accurately stated. Writer smoothly integrates evidence from various parts of the texts. Makes clear how the textual references support the writer's point. Includes all important relevant evidence found in the readings.
- 4 Support for the position is thorough, though perhaps somewhat prosaic. Shows a thorough knowledge of the readings. Evidence is accurately stated. Makes clear how

*By Barbara E. Walvoord, Department of English, University of Notre Dame.

- the textual references support the writer's point. May not smoothly integrate evidence from various parts of the texts. Includes most of the important relevant evidence found in the readings.
- 3 Support for the position is adequate. Shows a thorough knowledge of the readings. Evidence is substantially accurate, though may have some distortion or inaccuracies. Mostly clear about how the textual references support the writer's point. May not smoothly integrate evidence from various parts of the texts. May omit some relevant evidence found in the readings.
 - 2 As for 3 above, but support for the position is barely adequate and/or may omit major relevant evidence found in the readings.
 - 1 Support is absent or slim, and/or textual references are substantially inaccurate and/or not related to the writer's point.

Acknowledgment of Alternative Points of View

- 5 Acknowledges all reasonable alternative points of view found in the readings or raised in class. Accurately and respectfully summarizes these points of view. Responds to alternative points of view thoroughly and creatively, showing why the writer has chosen his or her own point of view rather than these.
- 4 Acknowledges most reasonable alternative points of view found in the readings or raised in class. Summary of these points of view is substantially accurate. Responds adequately to alternative points of view, showing why the writer has chosen his or her own point of view rather than these.
- 3 Acknowledges at least one reasonable alternative point of view found in the readings or raised in class. Summary of this point of view is substantially accurate.
- 2 Acknowledges at least one reasonable alternative point of view found in the readings or raised in class. Summary of this point of view is substantially inaccurate.
- 1 Acknowledges no alternative points of view.