DESIGNING RUBRICS TO ASSESS CRITICAL THINKING, ETHICAL REASONING, AND COMMUNICATION

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OUTLINE

- Identify purposes of using rubrics for evaluation/grading of student work
- Define desired skills for critical thinking, communication, and ethical reasoning
- Introduce rubric examples
- Describe characteristics of a “good” rubric
- Practice designing a rubric
- Address classroom issues
USING A RUBRIC TO EVALUATE/GRADE/ASSESS STUDENT WORK

RUBRIC: SET OF SCORING GUIDELINES

GENERAL TYPES OF RUBRICS:
• Holistic: Evaluate set of criteria taken as a whole
• Analytical: Evaluate performance on 2 or more criteria
• Combination Analytical & Holistic

CHOOSING A RUBRIC:
• Adopt Existing Rubric
  o Saves time
  o Can use across courses & assignments for consistent program assessment
  o Provide students with consistent feedback across assignments and/or courses
  o Might not address the specific skills needed in an assignment
  o Less specific, requiring professor and students to connect the specifics of an assignment to a generalized set of criteria

• Create an Assignment-Specific Rubric (Versus Using a General Rubric)
  o Easier to specifically link grading & assessment
  o Customized for the assignment ➔ easier for professor & students to use & understand
  o Requires time & expertise to develop a well-designed rubric
  o Less generalized; students are less likely to recognize that the rubric criteria apply to other assignments and/or courses
CLEAR LEARNING OBJECTIVES ARE ESSENTIAL

Establishing clear learning objectives (or desired skills) is essential because the objectives:
* Clarify what professors want students to be able to do at the end of a course or program
* Focus attention on the process of student learning
* Encourage evaluation of how well the learning activities tie to desired outcomes
* Provide standards against which student performance can be assessed/graded

ACTIVITY: WHAT ARE YOUR LEARNING OBJECTIVES—i.e. WHAT WOULD YOU LIKE STUDENTS TO DEMONSTRATE?

Critical Thinking

Communication

Ethical Reasoning
### Examples of Critical Thinking Skills Defined by Accountants

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<tr>
<td>III-Professional Skills</td>
<td>Personal Competency: Problem Solving and Decision Making</td>
<td>Public Accountants’ Definition of Critical Thinking</td>
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</table>

- **CICA – CA Competency Map (2008)**
  - III-1 Obtains information
    - III-1.1 Gathers or develops information and ideas
    - III-1.2 Develops an understanding of the operating environment
    - III-1.3 Identifies the needs of internal and external clients and develops a plan to meet those needs
  - III-2 Examines and interprets information and ideas critically
    - III-2.1 Analyzes information or ideas
    - III-2.2 Performs computations
    - III-2.3 Verifies and validates information
    - III-2.4 Evaluates information and ideas
    - III-2.5 Integrates ideas and information from various sources
    - III-2.6 Draws conclusions/forms opinions
  - III-3 Solves problems and makes decisions
    - III-3.1 Identifies and diagnoses problems and/or issues
    - III-3.2 Develops solutions
    - III-3.3 Decides/recommends/provides advice

- **AICPA – Core Competencies (1999; 2002)**
  - Lists information and evidence that is relevant for a problem
  - Identifies uncertainties about the interpretation or significance of information and evidence
  - Makes valid and reliable evaluations of information, including the significance of evidence or facts for problem definition and solution
  - Considers unconventional approaches and solutions to problems
  - Analyzes the impact, pros, and cons of potential solutions or actions
  - Analyzes the quality of information and evidence, including validity, reliability, and significance
  - Synthesizes novel or original definitions of problems and solutions as circumstances dictate
  - Uses experience and comparison in forming opinions
  - Seeks consensus where appropriate
  - Reasons carefully and thinks effectively in abstract terms or generalizations
  - Knows when to follow directions, question plans or seek help
  - Strategically considers contingencies and future developments
  - Adapts to new contexts and promotes constructive change

- **Baril et al. (1998)**
  - Cognitive Attributes and Characteristics:
    - Recognizes problem areas
    - Recognizes when additional information is needed
    - Fits details into the overall environment; sees the “big picture”
    - Transfers knowledge from one situation to another
    - Anticipates, thinks ahead, plans
  - Non-Cognitive Attitudes and Behaviors
    - Exhibits initiative
    - Exhibits curiosity
    - Exhibits confidence
    - Communicates clearly and articulately
  - Other:
    - Displays creativity
    - Accepts ambiguity
    - Recognizes when there is more than one acceptable solution
    - Makes qualitative judgments
    - Displays rapid thought process
    - Displays healthy skepticism; asks “why?” or “why not?”
    - Challenges the status quo
    - Determines the extent of what is reasonable; defines the limits of acceptability
    - Recognizes personal limitations
    - Exposed to diverse cultures, knowledge and backgrounds
    - Recognizes presence of biases

[The above list omits the bullet points, which describe each skill in more detail.]
## Examples of Communication Skills Defined by Accountants

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<tr>
<td><strong>III-4 Communicates effectively and efficiently</strong></td>
<td><strong>Personal Competency: Communication</strong></td>
<td><strong>Practitioner and Academic Perceptions of Communication Skills</strong></td>
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| **III-4.1 Seeks and shares information, facts, and opinions through written discussion** | - Expresses information and concepts with conciseness and clarity when writing and speaking  
- Identifies uncertainties about the best way to communicate  
- Places information in appropriate context when listening, reading, writing and speaking  
- Selects appropriate media for dissemination or accumulation of information  
- Organizes and effectively displays information so that it is meaningful to the receiving party  
- Receives and originates direct and indirect messages as appropriate when listening, reading, writing and speaking  
- Uses interpersonal skills to facilitate effective interaction over time  
- Communicates decisions appropriately over time | - Provides information and ideas in a clear, ordered and effective pattern  
- Develops reasoned argument, and uses evidence to support conclusions  
- Uses correct spelling, grammar and punctuation  
- Uses formats and methods which allow accurate, complete and relevant information to be stored  
- Develops a persuasive case rather than simply setting out an overview of arguments  
- Adjusts writing styles for different audiences  
- Adjusts writing styles for different formats  
- Uses schematic diagrams to enhance comprehension of reports  
**Written Activity Skill Areas:**  
- Listening skills – Interpret correctly verbal and non-verbal information from another individual  
- Listening skills – Check that the correct interpretation is being made by summarizing what has been said and obtaining feedback  
- Explains and responds to feedback  
**Oral Communication Skill Areas: One-to-One**  
- Prepares and identifies information necessary  
- Asks pertinent questions in order to test assumptions and perspectives  
- Clarifies purpose and procedures for managing meetings  
- Adopts a non-verbal communication style which promotes commitment and agreement (e.g. active listening, posture, eye contact)  
- Draws others into discussions  
**Oral Communication Skill Areas: In Meetings**  
- Prepares and identifies information necessary  
- Asks pertinent questions in order to test assumptions and perspectives  
- Clarifies purpose and procedures for managing meetings  
- Adopts a non-verbal communication style which promotes commitment and agreement (e.g. active listening, posture, eye contact)  
- Draws others into discussions  
**Oral Communication Skill Areas: Formal Presentations** |
| - Obtains and evaluates the views of others  
- Confirms own understanding by summarizing views  
- States own views clearly and concisely  
- Analyzes and synthesizes the comments of all parties to develop a complete and insightful understanding of the issues at hand  
- Communicates conclusions reached or next steps to be taken  
**III-4.2 Documents in written and graphic form** | - Records information and ideas using the appropriate form and medium of written and/or graphic communication  
- Identifies the intended purpose of the document, its intended users, and user needs; the uses to which the document will be put, deadlines, and restrictions on its distribution  
- Given the intended purpose and the user’s needs, identifies and develops:  
  - a logical and appropriate structure for the document  
  - the nature and amount of background information needed and the appropriate level of technical language to use  
  - the amount of detail required  
- Prepares appropriate, clear, concise, and precise documentation  
**III-4.3 Presents information effectively** | - Expresses information and ideas in a clear, ordered and effective pattern  
- Develops reasoned argument, and uses evidence to support conclusions  
- Uses correct spelling, grammar and punctuation  
- Uses formats and methods which allow accurate, complete and relevant information to be stored  
- Develops a persuasive case rather than simply setting out an overview of arguments  
- Adjusts writing styles for different audiences  
- Adjusts writing styles for different formats  
- Uses schematic diagrams to enhance comprehension of reports  
- Listening skills – Interpret correctly verbal and non-verbal information from another individual  
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- Explains and responds to feedback  
- Prepares and identifies information necessary  
- Asks pertinent questions in order to test assumptions and perspectives  
- Clarifies purpose and procedures for managing meetings  
- Adopts a non-verbal communication style which promotes commitment and agreement (e.g. active listening, posture, eye contact)  
- Draws others into discussions  
| - Analyzes the purpose, audience, and context of the presentation  
- Decides on the appropriate presentation medium to achieve the purpose  
- Considers the likely extent of the audience’s existing knowledge  
- Preparing and identifying information necessary  
- Asks pertinent questions in order to test assumptions and perspectives  
- Clarifies purpose and procedures for managing meetings  
- Adopts a non-verbal communication style which promotes commitment and agreement (e.g. active listening, posture, eye contact)  
- Draws others into discussions |
<table>
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<th>Knowledge of the subject and range of knowledge among audience members</th>
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<td>• Analyzes the amount of detail required and the necessary extent of precision and/or verification of any information being used</td>
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<td>• Considers any restrictions on the dissemination of confidential information, and/or the risk of such information being obtained by unauthorized users</td>
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<tr>
<td>• Explains purpose and structure of presentation</td>
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<td>• Adapts personal and presentation styles appropriate to listeners and situations</td>
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<tr>
<td>• Modifies presentation in response to feedback from listeners (includes asking questions to check others’ understanding and gauging their reactions)</td>
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[The above list was partially edited.]
Steps for Better Thinking
A Developmental Problem Solving Process

FOUNDATION
Knowledge and Skills
• Repeat or paraphrase information from textbooks, notes, etc.
• Reason to single "correct" solution, perform computations, etc.

STEP 1
Identify the Problem, Relevant Information, and Uncertainties (low cognitive complexity)
• Identify problem and acknowledge reasons for enduring uncertainty and absence of single "correct" solution
• Identify relevant information and uncertainties embedded in the information

STEP 2
Explore Interpretations and Connections (moderate cognitive complexity)
• Interpret information:
  (1) Recognize and control for own biases
  (2) Articulate assumptions and reasoning associated with alternative points of view
  (3) Qualitatively interpret evidence from a variety of points of view
• Organize information in meaningful ways that encompass problem complexities

STEP 3
Prioritize Alternatives and Implement Conclusions (high cognitive complexity)
• After thorough analysis, develop and use reasonable guidelines for prioritizing factors to consider and choosing among solution options
• Efficiently implement conclusions, involving others as needed

STEP 4
Envision and Direct Strategic Innovation (highest cognitive complexity)
• Acknowledge, explain, and monitor limitations of endorsed solution
• Integrate skills into ongoing process for generating and using information to guide strategic innovation

## Examples of Ethical Reasoning Skills Defined by Accountants

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<tbody>
<tr>
<td><strong>I-Ethical Behaviour and Professionalism</strong></td>
<td>Personal Competency: Professional Demeanor</td>
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<tr>
<td><strong>I-2 Acts competently with honesty and integrity</strong></td>
<td>• Commits to confidentiality, quality, efficiency, growth in personal conduct and capabilities, and ethical behavior</td>
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<tr>
<td>• Follows the law and the spirit of the law</td>
<td>• Accepts professional development as an uncertain and life-long process</td>
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<tr>
<td>• Ensures that breaches of an entity’s code of conduct and unethical behavior are reported to a supervisor so that such information is communicated to the appropriate level within the governing body (e.g., board of directors)</td>
<td>• Identifies ethical dilemmas</td>
</tr>
<tr>
<td>• Acts honestly</td>
<td>• Evaluates information, including others’ professional criticism and evaluation, in a manner free of distortions, personal bias or conflicts of interest</td>
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<tr>
<td>• Makes transparent decisions, recognizing and accepting responsibility for actions and for the consequences of those decisions</td>
<td>• Relates lessons learned from prior mistakes to new situations</td>
</tr>
<tr>
<td>• Critically evaluates appropriate internal and / or external resources in resolving ethical dilemmas</td>
<td>• Considers the impact of alternative solutions on various stakeholders in an ethical dilemma</td>
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<tr>
<td><strong>I-3 Carries out work with a desire to exercise due care</strong></td>
<td>• Conducts oneself with honesty</td>
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<tr>
<td>• Ensures that when carrying out work, the interests of the public, the client, and the employer are placed before own self-interest</td>
<td>• Recognizes situations where professional ethical standards apply and behaves accordingly</td>
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<tr>
<td>• Preserves the trust inherent in fiduciary relationships with the public at large, the client, the employer, and the profession</td>
<td>• Uses appropriate ethical values in making decisions</td>
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<tr>
<td>• Prepares information in such a way that the pertinent facts are fairly presented</td>
<td>• Measures oneself against evolving standards and meets or exceeds those standards</td>
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<tr>
<td>• Interprets information in an objective manner, exercising professional skepticism when required</td>
<td>[The above list omits some bullet points, which are not directly related to ethical reasoning.]</td>
</tr>
<tr>
<td>• Makes appropriate ethical judgments based on an understanding of the level of care expected of professional accountants in various situations</td>
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<tr>
<td><strong>I-4 Maintains objectivity and independence</strong></td>
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<tr>
<td>• Understands the principles and rules of independence and acts appropriately</td>
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<td>• Identifies the potential for bias in a proposed activity or decision, and takes steps to maintain objectivity</td>
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<tr>
<td>• Takes steps to maintain independence in both fact and appearance, extricating oneself from situations where independence may be impaired</td>
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<tr>
<td><strong>I-5 Avoids conflict of interest</strong></td>
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<tr>
<td>• Understands the reasons for avoiding conflict-of-interest situations and is familiar with the guidelines and laws that have been developed to prevent their occurrence</td>
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<td>• Consciously avoids real, potential or perceived conflicts of interest</td>
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<tr>
<td>• Ensures that the interest of one party is not favoured over that of another</td>
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**Examples of Skills, Issues, and Values for Ethical Reasoning**

Wolcott (2007, Exhibit 3)

<table>
<thead>
<tr>
<th>Steps</th>
<th>Step 1—Identifying</th>
<th>Step 2—Exploring</th>
<th>Step 3—Prioritizing</th>
<th>Step 4—Envisioning</th>
</tr>
</thead>
</table>
| **Identify Ethical Problems and Courses of Action:** | * Identify reasons why the dilemma is open-ended, such as:  
  o Conflicts of interest (potential conflict among or harm to people, institutions, society, places, or things)  
  o Issues of fairness and honesty (e.g., truthfulness, integrity, trustworthiness, justice, equity, impartiality) | Objectively Consider Well-Being of Others and Society:  
  * Explore the interests, assumptions, and values of important stakeholders  
  * Explore the ethical dilemma from more than one moral philosophy, such as:  
    o Teleology approach  
    o Egoism approach  
    o Virtue approach  
    o Utilitarian approach  
    o Deontology or Rights approach  
    o Relativist approach  
    o Justice or Fairness approach  
    o Common good approach | Clarify and Apply Ethical Values:  
  * Identify the best option and identify the values associated with that choice  
  * Consider alternative ways to identify the best choice, such as:  
    o Prioritize the moral philosophies explored in Step 2  
    o Ask what the most ethical person would do in this situation  
    o Ask which values are most important for addressing this problem  
    o Ask how important it is to maintain high standards for values and principles  
    o Apply principles from a code of ethics such as the one published by the IMA: honesty, fairness, objectivity, and responsibility  
    * For the best solution, describe the trade-offs that are made among the interests of important stakeholders | Work Toward Ongoing Improvement in Personal, Organizational, & Social Ethics:  
  * Ask what the decision maker or others could learn from this dilemma  
  * Describe methods for monitoring and continuously improving ethical values and principles  
  * Identify types of ethical problems that might occur in the future and plan how they might be addressed  
  * Discuss why it is important to seek continuous improvement in ethical decision making |
| **Identify and Explore Ethical Problems and Courses of Action:** | * Ask whether this is a topic, issue, or event that cannot be discussed openly without tarnishing one person or party  
  * Discuss why the “ideal” ethical result might be impossible to achieve  
  * Discuss reasons for behaving ethically  
  * Identify potential courses of action | * | |

**Sources:**

- a The Internet Encyclopedia of Philosophy, Ethics, available at [www.utm.edu/research/iep/e/ethics.htm](http://www.utm.edu/research/iep/e/ethics.htm).
- b The Markkula Center for Applied Ethics at Santa Clara University, available online at [www.scu.edu/ethics/practicing/decision/framework.html](http://www.scu.edu/ethics/practicing/decision/framework.html).
CRITERIA FOR DESIGNING A RUBRIC

Adapted from Bonnie Mullinix, The TLT Group, http://www.tltgroup.org/resources/Rubrics.htm#CreatingARubric

CREATING A RUBRIC – KEY STEPS

1. **Identify the type and purpose of the rubric** - Consider what you want to grade/assess/evaluate and why.

2. **Identify distinct criteria to be evaluated** – Identify the relevant objectives/skills/expectations for the learning activity that will be evaluated (e.g. paper, project, presentation). Make sure that the distinctions between the assessment criteria are clear.

3. **Determine levels of assessment** - Identify the number of levels. Give each level a label (typically a number or descriptive titles such as “poor,” “acceptable,” and “excellent”).

4. **Describe each level for each criterion, clearly differentiating between them** - For each criterion, differentiate clearly between the levels of expectation. Whether holistically or specifically, there should be no question as to where a product/performance would fall along the continuum of levels. (Hint: Start at the lowest and highest levels of performance and work your way “in”).

5. **Involve learners in development and effective use of the Rubric** - Whether it is the first time you are using a particular rubric or the 100th time, learner engagement in the initial design or on-going development of the assessment rubric helps to increase their knowledge of expectations and make them explicitly aware of what and how they are learning and their responsibility in the learning process.

6. **Pre-test and retest your rubric** - A valid and reliable rubric is generally developed over time. Each use with a new group of learners or a colleague provides an opportunity to tweak and enhance it.
EVALUATE THE QUALITY OF A RUBRIC

ACTIVITY:
With other participants at your table, pick two of the rubrics in the separate handout.
- For each rubric:
  o Evaluate the rubric based on criteria #1, 2, 4, and 5 below.
  o Consider how well the rubric would likely satisfy criterion #3.
- Discuss whether you believe that criterion #6 is optional or essential.

CRITERIA FOR EVALUATING A RUBRIC
Adapted from criteria for an “Exemplary” rubric from Bonnie Mullinix, The TLT Group, http://www.tltgroup.org/resources/Rubrics.htm#CreatingARubric

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<tr>
<td>1. Clarity of criteria</td>
<td>Each criteria is distinct, clearly delineated and fully appropriate for the assignment(s)/course</td>
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<tr>
<td>2. Distinction between Levels</td>
<td>Each level is distinct and progresses in a clear and logical order</td>
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<td>3. Reliability of Scoring</td>
<td>Different raters would be likely to agree on scores using the rubric (i.e. high inter-rater agreement would likely occur)</td>
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<tr>
<td>4. Clarity of Expectations/ Guidance to Learners</td>
<td>Rubric could serve as a primary reference point for discussion and guidance for course/assignment(s) as well as evaluation of assignment(s)</td>
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<td>5. Support of Metacognition (Awareness of Learning)</td>
<td>Rubric could be regularly referenced and used to help learners identify the skills and knowledge they are developing throughout the course/ assignment(s)</td>
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<tr>
<td>6. Engagement of Learners in Rubric Development/ Use (Considered optional by some educators and a critical component by others)</td>
<td>Faculty and learners are jointly responsible for design of rubrics and learners use them in peer and/or self-evaluation</td>
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Using a Model of Cognitive Development to Guide Rubric Design

Rubric Based on a Model of Cognitive Development: Levels of performance are defined according to a model from developmental psychology, which in turn is based on research describing progressive levels of thinking complexity.

Themes from Developmental Psychology:

- Thinking skills can be arrayed cognitively from less complex to more complex
- Students must develop less complex skills before they can develop more complex skills
- Most college students operate at cognitive levels that are too low for adequate critical thinking and/or ethical reasoning performance
- Thinking skills develop slowly (if they do develop)
- Cross-curricular educational efforts and educational efforts over time are needed to give students sufficient time and practice for development of more complex skills

Benefits of a Rubric Based on Levels of Cognitive Development:

- Uses research-based criteria to sort skills from less to more complex
- Improve insights about the strengths and weaknesses in student work
- Identify the “next steps” in building student skills
- Provide students with more appropriate feedback for learning
- Improve consistency of ratings across professors and assignments
- Can establish learning goals/objectives based on the level of skills students are expected to achieve
**Practice Creating a Rubric**

Work with 1 or more other people. Select 2 or 3 criteria, and practice writing descriptions for 3 levels of student performance for each criterion.

<table>
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<th>Criteria</th>
<th>Lowest Level</th>
<th>Middle Level</th>
<th>Highest Level</th>
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REFERENCES:


ADDITIONAL RESOURCES FOR CREATING RUBRICS:


* Introduction to Performance Assessment
* Advanced Performance Assessment

Jon Mueller, Professor of Psychology at No Central College sponsors this comprehensive web site about authentic assessment and rubrics:

http://jonathan.mueller.faculty.noctrl.edu/toolbox/rubrics.htm

Additional college-level rubric examples are available at these web sites:

http://fp.dl.kent.edu/fcubed/modules/modules/goalsassessment/examples.html
http://faculty.css.edu/dswenson/web/Gradingrubrics/gradingrubrics.htm