

You just graded your midterm exam and 50 percent of the class failed. You covered the material in class, but the students are not mastering the skills and knowledge at the level you intended. How can you structure your course so students get feedback on their learning before taking an exam for a grade?

Among the various approaches to assessment of student learning, creating and using rubrics can serve the purpose of learning as well as evaluation. In this issue of the Academic Support Center's

annual newsletter, we look at the theoretical and practical basis for using rubrics, both as an assessment tool and as a vehicle to promote more engaged learning.

Why use rubrics? In the current era of data-driven accountability, efforts to close the achievement gap, increase student access to higher education, and raise and meet standards for learning outcomes are more important than ever. Higher education is on board to address these issues, and the conversation involves everyone. No matter what your role is—faculty, administrator,

or student support specialist—providing students with increased challenge, better support, and nonjudgmental feedback will allow more students to achieve higher levels of learning. Rubrics can help. They can provide important formative feedback for both the teacher and the students during the process of learning. Rubrics are the ladders that allow students to move along learning progressions. Join us as we explore these important elements and how rubrics can serve multiple purposes in the art and science of teaching and learning.

Rubrics!

What is a Rubric?

A rubric for instruction is a document, often in chart format, that identifies and describes various levels of quality that can be applied to a list of criteria to assess the intended learning outcome(s). Levels of quality are best determined or described by using words, letter grades, or a numerical scale, e.g., 5 = excellent, 4 = good, 3 = average, 2 = below average, and 1 = poor; A, B, C, D, F; 100%, 90%, 80%, etc.

Educators, perhaps unintentionally, often keep academic criteria to themselves. But what constitutes a good lab report? A good drawing? Or a satisfactory essay? How does multiple choice or solving problems on tests relate to learning outcomes?

Grades and Assessment

There is a difference between assessment and grading, but they do have one common characteristic as they both intend to identify what students have learned. Grades alone do not always give direct evidence to identify specific student learning outcomes and at what levels students have learned. Some course grades also include additional student behaviors that are not related to student learning outcomes (e.g., attendance and participation). A grade of B in a mathematics course indicates a student learned an acceptable level of math, but not the specific math knowledge or skills that the student mastered well or what areas need improvement. This level of detail about student learning outcomes is critical for faculty to reflect on curriculum, instruction, and assessment. A project or assignment grade would be a better link to the evidence of student learning, but a rubric for the project or assignment would provide the best direct evidence and the level at which the student learned and is an ideal source for assessment purposes. Grades are based on direct evidence of student learning such as the evaluations of tests, papers, and projects, but need to be clearly linked and aligned to learning goals and rubrics to suffice as direct evidence for assessment purposes.

Dr. Anne Wahl
Director of Student Learning Outcomes Assessment

Creating rubrics allows instructors to provide more informative feedback about students' strengths and areas needing improvement. Rubrics can anticipate and reveal mistakes students make and give them valuable information about their learning during the learning process. As such, "instructional rubrics" can support the development of skills and other related criteria, especially if students are involved in the process of identifying standards by analyzing models.

According to Heidi Goodrich Andrade, Assistant Professor of Educational and Counseling Psychology at the University of Albany, SUNY (2000), "Thinking-centered rubrics [can] help students think more deeply." Using discussions to think and talk about what constitutes good and poor work is "powerfully instructive." When comparing test scores and the quality of essays between two groups of students, one group that used rubrics and one that did not, Andrade noted that "test scores showed that the students who used the rubric to assess themselves learned more....Those who did not use a rubric tended to have a vaguer notion of how teachers determined their grade" (Andrade, "Using Rubrics," 2000).

Steps to Making an Instructional Rubric

Look at models: Review samples of good and poor work with students.

List criteria: Ask students, "What counts?" Add your own important criteria to this list. Refer to state, national, or accreditation standards.

Pack and unpack criteria: Edit a long list by combining criteria.

Articulate levels of quality: Identify levels of quality. Try using a "yes; yes, but; no, but; no" stem to level-determining statements:

EXAMPLE of Levels of Quality

Assignment: "Briefly summarize the plot of the story."

Level 4—"Yes, the plot is briefly summarized."

Level 3—"Yes, the plot is summarized but the summary included some unnecessary details or left out key information."

Level 2—"No, the plot was not summarized, but the summary did include some details from the story."

Level 1—"No, the plot was not summarized."

Create a draft rubric: Share the draft with students and ask for their comments.

Revise the draft: Hand out the revised rubric with the assignment; have students use it to assess their own or a peer's work; use it to assign grades. (Andrade, "Using Rubrics," 2000)

The Standards Movement and P-16 Education

The increased use of rubrics is due in large part to the standards movement in K-12 education. The standards movement was a direct response to growing concern over lower achievement levels among U.S. students. The relaxation of standards, a byproduct of the '60s and '70s cultural

R·I·T

Rochester Institute of Technology
Academic Support Center

revolution that emphasized self-discovery and individualism, followed by the consciousness revolution of the '80s, which emphasized practicality and efficiency, led to U.S. students losing rank in basic knowledge and skills compared to their Asian and European peers. Teaching the basics had been de-emphasized in U.S. schools, and in 1983, the Department of Education declared "A Nation at Risk" (Howe and Strauss, 2007). Compared to the 1970s, 1980s, and 1990s, the atmosphere in education has grown more conservative. In order to compete in a world economy and to deal with the complex issues of the 21st century, the U.S. needs to ensure that every student masters a higher level of foundation knowledge.

School districts in San Jose and Houston have eliminated the low tracks and placed all students in more rigorous class curricula, resulting in rising test scores and greater academic achievement (Somerville and Yi, "Curriculum and Assessment Systems," n.d., p. 34).

In New York state, K-12 standards have evolved into P-16 education (from preschool through the 16th year). In its 2006 document "P-16 Education: A Plan for Action," the Board of Regents envisioned strategies and actions that would "sustain students from their earliest years—with a focus on transitions, from pre-kindergarten and

elementary school, to middle school, then to high school and college—by improving critical systems and structures that support achievement." The Board of Regents acknowledged the need to align academic standards, curriculum, assessment, and instructional practice from preschool through college and emphasized building more effective transitions for students as they moved from one level of the system to the next. As part of this alignment, the increased use of rubrics would naturally extend to college.

The Bigger Picture: Applying a Standards-based Approach to Higher Education

Increased access to college has grown, but unfortunately it has not resulted in a comparable rise in degrees completed. In the 1990s, the rate of recent high school graduates going directly to college increased by almost 20 percentage points. However, the rate of degree completion increased by only nine percentage points. A 2002 study by the National Association of System Heads (NASH) found that there was little consensus between K-12 and higher education on what high school courses met postsecondary requirements. In fact, higher education was "arguably the most remiss in achieving consensus on curriculum requirements" (Somerville and Yi, "Curriculum and Assessment Systems," n.d., p. 27).

continued on page 2

Higher Achievement Levels

The move toward a more standards-based approach in K-12 education and its accompanying emphasis on testing has drawn a lot of criticism. Some believe that in order to meet mandates, states would lower achievement levels, teachers would "teach to the test," curriculum for gifted children would become nonessential, and disadvantaged students would struggle against the inherent cultural bias of giving all students the same test. However, initial testing results indicate higher achievement levels:

- Reading and math scores for 4th and 8th graders rose to record highs in 2007, according to the Nation's Report Card.
- African-American and Hispanic 4th graders (in reading and math) and 8th graders (in math) achieved their highest scores in history.
- U.S. 8th graders improved 16 points in math since 1995.
- The achievement gap in math between white and Hispanic and white and African-American 8th graders narrowed by three points between 2003 and 2007.
- Nationally, U.S. 4th graders (11 points higher) and 8th graders (four points higher) improved in math from 2003 to 2007.

("Progress by Our Schools and the U.S. Department of Education," 2008)

What is a Rubric?

continued from page 1

K-12 and higher education need to establish a rigorous course of study that allows students to meet state standards AND be prepared to go on to college. Why should higher education be involved? Because “completion of a rigorous college preparatory curriculum is the single most important predictor of who will complete college” regardless of race, ethnicity, grades, or SAT scores (Somerville and Yi, “Curriculum and Assessment Systems,” n.d., p. 31).

Lining up a single system of standards and assessments from high school to college placement would allow students to proceed based on whether they meet the standards, rather than what calibrated advanced placement courses they take. A standards-based approach would reduce the rate of failing grades in college-level foundation courses, and by extension, improve the rate of retention and, hopefully, college graduation.

Why Use Rubrics?

- Rubrics make clear the criteria by which student work will be assessed. Students, faculty, and other university stakeholders all benefit from explicit expectations and assessment criteria.
- Rubrics can inform teaching, helping faculty clarify expectations and guide decisions about curriculum, course, and assignment design.
- Rubrics produce assessments that are far more detailed than a single, holistic grade.
- Rubrics can make scoring easier and faster as they help instructors focus on what they want to measure.
- Rubrics make scoring more accurate and consistent and ensure the same criteria for all students.
- Rubrics provide concepts and vocabulary to support constructive discussions about learning and reflections on the learning process. Students can use rubrics to self-evaluate to see where they are and where they are headed.
- Rubrics give students a reference point for deeper engagement and peer assessment.
- Rubrics offer faculty a way to give students useful feedback and can help track student performance.
- Rubrics help gather direct evidence about student learning.

In best practices, rubrics, like other forms of assessment, are part of a cycle of reflection; they evolve based on input from users and the ongoing refinement of learning goals and course activities.

Dr. Anne Wahl
Director of Student Learning Outcomes Assessment

LEAST EFFECTIVE FEEDBACK

- Programmed instruction
- Praise
- Punishment
- Extrinsic rewards

Extrinsic rewards are “a controlling strategy that often leads to greater surveillance, evaluation, and competition, all of which have been found to undermine enhanced engagement and regulation (Deci & Ryan, 1985, as quoted in “The Power of Feedback,” 2007).

In their executive summary, Vincent Tinto and Brian Pusser call for further research on “alignment of standards, outreach, improved data collection, and quality assessments since unified P-16 approaches to student preparation show great promise for promoting postsecondary student preparation, access, persistence, and success (Tinto and Pusser, “Moving from Theory to Action, 2007, p. 3).

The Perils of a Rank-order Culture

On a clear and chilly morning last December, Rick Stiggins, who founded the Assessment Training Institute, addressed a packed room at RIT’s Center for Student Development. An inspiring and animated speaker, Stiggins described how, back in the 1920s and ’30s, the measurement community promoted the use of mathematical models for scaling students’ scores to determine academic ranking. Although neat and efficient, the objective methodologies were divorced from what actually happened in the classroom. A rank order culture works well for football, Stiggins argued, but when it comes to teaching and learning, the inherent exclusivity of sort-and-select ranking undermines the larger purpose of education. Lower ranking students lose motivation to learn, which only widens the achievement gap.

Assessment FOR Learning

According to Stiggins, a grading culture can be counter-productive. As the currency of education, grades carry heavy emotional artillery. From a student’s point of view, failing an exam is personal. Whether it’s the dreaded red pen bleeding all over an essay, or the 20 points lost for “little errors,” poor grades without the opportunity to remediate drains motivation and undercuts the learning process. The emotional dynamics of assessment can’t be ignored.

How can we design and deliver a more rigorous course of study without the accompanying emotional dynamics of rank order grading? How can assessment be designed to yield more engaged learning and higher achievement for more students? Rick Stiggins asserts that instead of a grading culture, we need a learning culture.

What Would a Learning Culture Look Like?

Stiggins (2002) calls it scaffolding. James Popham (2007) calls it learning progressions. The idea is that teachers establish a curricular goal, and then, through a backward analysis, isolate the key tasks students must accomplish to reach the goal. By pedagogically sequencing these tasks, or learning progressions, teachers create building blocks that consist of sub-skills and bodies of knowledge aimed at the larger, more distant curricular goal.

Learning targets can be garnered from state or accreditation standards, or from course standards. Once the targets have been identified, teachers need to deconstruct the building blocks through backward analysis and then transform these building blocks into student-friendly models. Rubrics provide feedback to help students master each building block.

Planning instructional sequences can provide the framework for an effective formative assessment process that supplies evidence that can help teachers adjust their instruction and students adjust their learning strategies. Popham (2007) notes that, “The formative assessment process will be far more successful if teachers systematically collect evidence of a student’s progress toward mastery of each key building block in a learning progression. If a student is having trouble with building blocks, assessments can pinpoint why” (“The Lowdown on Learning Progressions”). Students’ reactions to assessment results are more productive when they know what to do to improve their performance.

Stiggins (2008) calls for using classroom assessments, such as a rubric, in collaboration with students to track growth and focus on “winning streaks” rather than “losing streaks.” Student-involved classroom assessment, record keeping, and communication can serve to motivate students if they know what good work looks like and they can compare their work to the standard and, through continuous descriptive feedback, understand how to close gaps.

The assessment dynamics of rubrics allow students to make their own “data-based instructional decisions” (Stiggins, 2008). Structuring learning progressions, using rubrics, and partnering with students to assess their progress can build student self-efficacy.

“People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided” (Albert Bandura, as quoted in Stiggins, 2008).

The growing popularity of learning progressions, rubrics, and performance-based standards illustrates how theory can be put into practice. Increased rigor and standards-based outcomes, especially in the high school years through college, can only strengthen the raw material of our future workforce.

From a practitioner’s point of view, rubrics can guide learners along the scaffold of learning progressions and measure students’ mastery each step along the way. Additionally, rubrics can provide evidence of successful learning, strengthening a school’s or a teacher’s or a program’s accountability to meet its goals. From a researcher’s point of view, rubrics provide measurable evidence of pedagogy, thus serving the scholarship of teaching.

Feedback Preferences

Interestingly, feedback can be differentially given and received. For example, De Luque and Sommer (2000) found that “students from collectivists cultures (e.g., Confucian-based Asia, South Pacific nations) preferred indirect and implicit feedback, more group-focused feedback, and no self-level feedback. Students from individualist cultures (e.g., the United States) preferred more direct feedback particularly related to effort, were more likely to use direct inquiry to seek feedback, and preferred more individual focused self-related feedback” (“The Power of Feedback,” 2007).

Students Using Rubrics for Self-assessment

Students can be savvy evaluators of their own work. Using rubrics as a self-assessment tool can be informative as well as evaluative, guiding revision and improvement in the learning process.

Often instructors are hesitant to let students use self-assessment, and their tentativeness is well-founded. When self-assessment involves students appointing a grade to their work, they may be tempted to give themselves an inflated grade and subsequently be unmotivated to revise their work. This summative approach actually limits learning and should be avoided.

In contrast, self-assessment that is formative and allows students to assess works in progress can lead to revision, improvement, and deeper learning. A rubric that lists criteria and levels of quality can orient learners to excellence as defined by the experts—the teacher, the discipline, and even the students themselves.

Heidi Andrade warns against defining criteria for assignments too narrowly. When a criterion is too task-specific, it can produce cookie-cutter results. Andrade states, “When carefully designed, perhaps collaboratively with students, good rubrics can provide students with important guidelines without constraining creativity and can be a boon to self-assessment” (Andrade, p. 61, 2007/2008).

The process of rubric-referenced self-assessment involves three basic steps:

Set clear expectations. Involving students in this task allows them to think about what counts and how quality is determined. Evaluating and analyzing models or examples and assigning levels of quality can reinforce the learning process.

Conduct self-assessment. Monitoring progress by assessing first attempts allows students to compare their performance to the rubric.

Revising. This step is critical. Students need to know that their self-assessment efforts will be followed by an opportunity to make improvements.

The process of using rubric-referenced self-assessment must be experienced in order for students to see the value of it. Combining this type of assessment with peer assessment and teacher feedback can further impact the learning process and the final demonstration of knowledge.

Finally, a 2007 study by Andrade, Du, and Wang that translated assessments into grades indicated that “the average grade for the group that engaged in rubric-referenced self-assessment was low B, whereas the average grade for the comparison group was high C (Andrade, p. 63, 2007/2008).

Academic Support Center



Navigate Your Way

Academic Support Center

To support our mission, we offer a wide range of classes, workshops, and one-on-one instruction and consultation to promote student success and enhance retention. Services include drop-in math and writing instruction, academic assessment, study skills workshops, Structured Monitoring, and the College Restoration Program. Check out our current offerings at www.rit.edu/asc.

ASC Today Editorial Board

Belinda Bryce (Chair)
Paula French
Andy Perry

Many thanks to our colleague Dr. Anne Wahl, who contributed to this edition of *ASC Today*.

References:

For a list of references and sample rubrics, please go to our website at www.rit.edu/asc.