Beyond "I Give Myself an A"

SUMMARY

Students take responsibility for improving their academic skills by analyzing models, developing criteria for success and using rubrics to create, assess and revise their work — whether it be a persuasive essay or a mathematics challenge. In this way, students learn how to recognize and define excellence and use tools to achieve it.

Research has shown that feedback tends to promote learning and achievement (Bangert-Drowns et al., 1991; Butler & Winne, 1995; Crooks, 1988; Hattie & Timperley, 2007), yet most students get little informative feedback on their work (Black & Wiliam, 1998). The scarcity of feedback in most classrooms is due, in large part, to the fact that few teachers have the time to respond as often as they would like to each student's work. Fortunately, research also shows that students themselves can be useful sources of feedback via self-assessment (Andrade, Du & Mycek, 2010; Andrade, Du, & Wang, 2008; Ross, Rolheiser, & Hogaboam-Gray, 1999).

Self-assessment is a process of formative assessment during which students reflect on the quality of their work, judge the degree to which it meets explicitly stated goals or criteria, and revise accordingly. The emphasis here is on the word *formative*.

Self-assessment is done on drafts of works in progress in order to inform revision and improvement; it is not a matter of having students determining their own grades. Given what we know about human nature, as well as findings from research regarding students' tendency to inflate self-evaluations when they will count toward formal grades (Boud & Falchikov, 1989), we subscribe to a purely *formative* type of student self-assessment.

Self-assessment meets the criteria of high-quality formative assessment practice outlined by Wiliam (2007):

1) clarifying, sharing, and understanding learning intentions and criteria for success by discussing model assignments and co-creating rubrics;

2) engineering effective classroom discussions, questions, and tasks that elicit evidence of learning;

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3) providing feedback that moves learners forward, in this case self-generated feedback;

4) activating students as instructional resources for themselves; and

5) activating students as the owners of their own learning by empowering them to think about the quality of their own learning and work and how to make improvements to both.

Features of Self-Assessment Using Rubrics and Checklists

Thoughtful self-assessment is often scaffolded by a rubric. Rubrics have become popular with teachers as a means of communicating expectations for an assignment, providing focused feedback on works in progress, and grading final products (Andrade, 2000; Jonsson & Svingby, 2007; Moskal, 2003; Popham, 1997). Although educators tend to define the word "rubric" in slightly different ways, a commonly accepted definition is a document that articulates the expectations for an assignment by listing the criteria, or what counts, and describing levels of quality from excellent to poor (Andrade, 2000).

Rubrics are often used to grade student work, but many authors argue that they can serve another, more important role as well: Rubrics can *teach as well as evaluate* (Arter & McTighe, 2001; Quinlan, 2006; Spandel, 2006; Stiggins, 2001). Rubrics become a teaching tool when students use them to understand the goals of and standards for an assignment, compare their work-in-progress to those goals and standards, and determine how to fill in any gaps. Rubric-referenced self-assessment is a process of formative assessment in which students use a rubric (or checklist) to guide their judgments about the quality of their own work. The self-assessment process typically involves the following steps:

- Students are presented with one or more *models* of the activity/assignment.
- Teachers and students discuss the *model's strengths and weaknesses.*
- Students *co-create the rubric* or contribute to rubric criteria with teachers.

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If students produce it, they can assess it; and if they can assess it, they can improve it.

Students:

View a Model

Critique the Model

Contribute to Rubric Criteria

Create a Product

Self-assess with Rubric

Revise and Improve the Product

After the teacher produces a rubric based on the discussion held previously with students and distributes it in a form that individuals can use:

- Students *complete the learning activity/assignment* with the rubric as a guideline.
- Students *self-assess* the outcome using the rubric in a systematic, step-by-step process.
- Students *revise and improve* their work actively referencing scoring criteria.

Andrade and her colleagues (i.e., Andrade, Du, & Mycek, 2010; Andrade, Du, & Wang, 2008) have shown that reviewing a model, generating criteria, and using a rubric to self-assess can help middle-level students improve their writing. In the ELA and social studies classes that were the focus of research, the instructional targets were related to writing a persuasive essay. These targets were drawn from NYS *Learning Standards for English Language Arts* in effect at the time (Standard 3: Students will read, write, listen, and speak for critical analysis and evaluation. See *New York State P-12 Common Core Learning Standards for English Language Arts and Literacy* for new standards).

Students in the groups using self-assessment discussed a model essay and generated criteria for their writing assignments by identifying the qualities that made the model effective. Before the students began the essays, the rubric, which included the criteria generated by these students during the previous class, was handed out and explained. The rubric specified the following criteria: content, organization, voice, word choice, sentence fluency, and conventions. At right, see an example of a persuasive essay rubric.

The purposes and features of the self-assessment process were discussed and demonstrated, and any questions and concerns were addressed. Students used class time to work on their essays. The teacher then guided them in assessing their work according to the rubric. This self-assessment process was highly scaffolded (i.e., students were given a high degree of support in learning and completing the process). Students were asked to:

1. **Underline** key phrases in the highest achievement column of the rubric with colored pencils in order to highlight the characteristics they were to self-assess, one at a time (e.g., underline in blue the phrase "clearly states an opinion" in the rubric).

2. **Underline** or circle in their drafts the **evidence** of having met the particular criterion. For example, students would underline in blue the statement of their opinion.

Persuasive Essay Rubric

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Ideas and content	The paper clearly states an opinion and gives 3 clear, detailed reasons in support of it. Opposing views are addressed.	An opinion is given. One reason may be unclear or lack detail. Opposing views are mentioned.	An opinion is given. The reasons given tend to be weak or inaccurate. May get off topic.	The opinion and support for it is buried, confused and/or unclear.
Organization	The paper has an interesting beginning, developed middle and satisfying conclusion in an order that makes sense. Paragraphs are indented, have topic and closing sentences, and main ideas.	The paper has a beginning, middle and end in an order that makes sense. Paragraphs are indented; some have topic and closing sentences.	The paper has an attempt at a beginning and/or ending. Some ideas may seem out of order. Some problems with paragraphs.	There is no real beginning or ending. The ideas seem loosely strung together. No paragraph formatting.
Voice and tone	The writing shows what the writer thinks and feels. It sounds like the writer cares about the topic.	The writing seems sincere but the writer's voice fades in and out.	The paper could have been written by anyone. It shows very little about what the writer thought and felt.	The writing is bland and sounds like the writer doesn't like the topic. No thoughts or feelings.
Word choice	The words used are descriptive but natural, varied and vivid.	The words used are correct, with a few attempts at vivid language.	The words used are ordinary. Some may sound forced or clichéd.	The same words are used over and over, some incorrectly.
Sentence fluency	Sentences are clear, complete, begin in different ways, and vary in length.	Mostly well-constructed sentences. Some variety in beginnings and length.	Many poorly constructed sentences. Little variety in beginnings or length.	Incomplete, run-on and awkward sentences make the paper hard to read.
Conventions	Spelling, punctuation, capitalization, and grammar are correct. Only minor edits are needed.	Spelling, punctuation and capitalization are usually correct. Some problems with grammar.	There are enough errors to make the writing hard to read and understand.	The writing is almost impossible to read because of errors.

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3. If they could not find evidence of having met the standard, students would **write a specific note** at the top of their draft related to necessary improvements for their final drafts (e.g., "Add opinion" or "Make opinion more clear").

4. **Repeat** this process for each criterion and sub-criterion on the rubric.

5. **Revise** their work according to their analysis.

The authors are currently developing a similar process of self-assessment in a seventh-grade mathematics class. In the mathematics class, the instructional target was to solve extended response problems requiring the use of the Pythagorean Theorem to find the length of the hypotenuse or a leg of a right triangle.

This target was drawn from NYS Learning Standards in effect at the time (NYS Mathematics Standard: 7.G.8 Use the Pythagorean Theorem. See *New York State P-12 Common Core Learning Standards for Mathematics* for new standards).

For this research project, students are given extended response questions and told they will be asked to solve them, to self-assess according to a partially co-created checklist, and to revise their work as needed. The self-assessment checklist will include both process and product criteria.

The ***process*** criteria involve students in:

- Checking their understanding of the task
- Explaining what is known
- Planning an approach
- Solving the problem
- Explaining their solution
- Checking their solution

The ***product*** criteria are co-created with students:

- Appropriate formula
- Diagram with clear labels
- All work shown and connected to final answer
- Correct calculations
- Final answer clearly identified
- Answer labeled with units, if appropriate

See checklist at right.

Mathematics Checklist

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1		**Understand the task**	I can clearly state what the problem is asking me to find.
2		**Explain what is known**	I can clearly explain the given information (what I know from the problem). I use words, numbers, and diagrams as appropriate.
3		**Plan an approach**	I can clearly describe my chosen strategy, which is efficient and sophisticated (e.g., "I will make a table," "make an organized list," "draw a diagram").
4		**Solve the problem**	I use my plan to solve every part of the problem. If my strategy doesn't work, I try a new one. I write out all the steps in my solution so the reader doesn't have to guess at how or why I did what I did. I use words, numbers, and diagrams/charts/graphs, as appropriate. My work is clearly labeled.
5		**Explain the solution**	I clearly explain my solution and why I believe it is correct using precise and correct math terms and notations. I check to make sure my solution is reasonable. I check for possible flaws in my reasoning or my computations. If I can, I solve the problem in a different way and get the same answer.
6		**Check the solution**	I check my solution according to the scoring criteria. **Scoring Criteria:** ___ Appropriate formula ___ Diagram with clear labels ___ All work shown and connected to final answer ___ Correct calculations ___ Final answer clearly identified ___ Answer labeled with units, if appropriate If my solution is incorrect, I find my mistake, determine a new plan, solve the problem, and justify my new answer.

WHAT DOES THE RESEARCH SAY?

Rubric-referenced self-assessment was associated with higher scores on significant, meaningful aspects of writing.

Formative Self-Assessment Leads to Gains in Student Learning

The steps of self-assessment described here have been associated with improvements in learning. For example, improvements have been shown in elementary and middle-level students' writing (Andrade, Du & Mycek, 2010; Andrade, Du, & Wang, 2008). In these and other studies (Ross, Rolheiser, & Hogaboam-Gray, 1999), students improved not just in terms of mechanics, but also in their ability to handle sophisticated qualities such as content, organization, and voice. The fact that rubric-referenced self-assessment was associated with higher scores on important qualities like ideas and content testifies to the potential of such processes to help students master significant, meaningful aspects of writing — at least when the rubrics emphasize those important qualities and when students are actively involved in using them (Andrade, 2006). The improvements in the quality of student writing had practical as well as statistical significance. For instance, when the findings of the 2008 study by Andrade, Du, and Wang were translated into typical classroom grades, the average grade for the group that engaged in rubric-referenced self-assessment was a low B, whereas the average grade for the comparison group was a high C.

Similar results have been found in mathematics. After teaching some educators to implement self-assessment in their fifth- and sixth-grade math classes, Ross, Hogaboam-Gray and Rolheiser (2002) found that students in the group using this approach outperformed students in the comparison group. Self-assessment has also been shown to be associated with student achievement in social studies (Lewbel & Hibbard, 2001), science (White & Frederiksen, 1998), and even on external national examinations (MacDonald & Boud, 2003). Self-assessment can be useful in any subject. If students produce it, they can assess it; and if they can assess it, they can improve it.

Because the purpose of student self-assessment is to engage students in critiquing their work with an eye for possible improvements, the information collected via self-assessment in both the writing and math projects was used only by the students. It was not collected or used in any way by the teacher. This process avoids the grade inflation phenomenon noted in self-evaluation research (e.g., Falchikov & Boud, 1989), perhaps because students tend to give themselves higher evaluations when they believe that their response will influence their grade for the assignment.

Students can be honest in their assessments of the strengths and weaknesses in their work if the outcome of the assessment is private. However, while no formal report on the self-assessments is given to the instructor, it

would be appropriate, even conscientious, of the teacher to solicit feedback voluntarily from the students based on their self-assessment results. This feedback can be used (with other forms of assessment) to inform future instructional content and practices.

One of the major benefits of rubric-referenced self-assessment is that the process is the same for all student populations and can help all students to become more self-directed. Students with disabilities, when necessary, can be given adapted rubrics and/or additional time to assess their work if needed. Any accommodations delineated on a student's Individualized Education Program (IEP) or Section 504 Accommodation Plan (for students with disabilities that do not meet the eligibility criteria for an IEP) can be provided during the self-assessment process.

Limitations of this method of assessment include the time necessary to instruct students in the process of rubric-referenced self-assessment and to co-create criteria. However, practice has shown that the additional time is not substantial (e.g., Andrade et al., 2009). In addition, there is limited research in some content areas. Surprisingly, perhaps, students' accuracy in self-assessment has not been shown to be a limitation; it appears that the process of critiquing one's own work is of benefit regardless of accuracy.

Final Thoughts

We encourage educators and researchers to take advantage of what we now know about the conditions under which self-assessment is likely to lead to higher achievement. Students have reported that they were more likely to self-assess when they knew what their teachers expected, and that their self-assessments were typically followed by serious attempts to revise and improve their work. The process of student self-assessment through rubrics can be further enhanced with peer assessment and teacher feedback (Andrade & Du, 2007). Ross (2006) recommended the following: define the criteria by which students assess their work; teach students how to apply the criteria; give students feedback on their self-assessments; and give students help in using self-assessment data to improve performance.

We recommend two additional conditions:

- provide sufficient time for revision after self-assessment, and
- do not turn self-assessment into self-evaluation by counting it toward a grade.

The implications for classroom practice that emerge from this research seem relatively straightforward: Students ought to be actively engaged in critiquing sample pieces of work, in

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thinking together about the criteria by which their work will be evaluated, and in self-assessment of their works in progress. By involving students in the assessment process in these ways, teachers can blur the distinction between instruction and assessment. This can transform many activities in the classroom into a seamless flow of analyzing models, creating products, and continuously evaluating and improving products. These are habits or routines that can have a lifelong positive effect — well beyond the content of a particular curriculum.

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