Student Self-Assessment: The Key to Stronger Student Motivation and Higher Achievement

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In the current era of standards-based education, student self-assessment stands alone in its promise of improved student motivation and engagement, and learning. Correctly implemented, student self-assessment can promote intrinsic motivation, internally controlled effort, a mastery goal orientation, and more meaningful learning. Its powerful impact on student performance—in both classroom assessments and large-scale accountability assessments—empowers students to guide their own learning and internalize the criteria for judging success. In this article we will define student self-assessment and its importance in influencing student motivation and learning. We begin with a detailed definition of self-assessment, then review pertinent theoretical and research literature that supports the positive impact of student self-assessment in the classroom. Our intent is to show that, based on both theoretical and applied research and theory, self-assessment works, and that by applying a set of practical steps teachers can facilitate this kind of assessment and reap the benefits.

What Is Student Self-Assessment?

Self-assessment could mean that students simply check off answers on a multiple-choice test and grade themselves, but it involves much more than that. Self-assessment is more accurately defined as a process by which students 1) monitor and evaluate the quality of their thinking and behavior when learning and 2) identify strategies that improve their understanding and skills. That is, self-assessment occurs when students judge their own work to improve performance as they identify discrepancies between current and desired performance. This aspect of self-assessment aligns closely with standards-based education, which provides clear targets and criteria that can facilitate student self-assessment. The

pervasiveness of standards-based instruction provides an ideal context in which these clear-cut benchmarks for performance and criteria for evaluating student products, when internalized by students, provide the knowledge needed for self-assessment. Finally, self-assessment identifies further learning targets and instructional strategies (correctives) students can apply to improve achievement.

Thus, self-assessment is conceptualized here as the combination of three components related in a cyclical, ongoing process: self-monitoring, self-evaluation, and identification and implementation of instructional correctives as needed (see Figure 1). Essentially, students identify their learning and performance strategies, provide feedback to themselves based on well-understood standards and criteria, and determine the next steps or plans to enhance their performance.

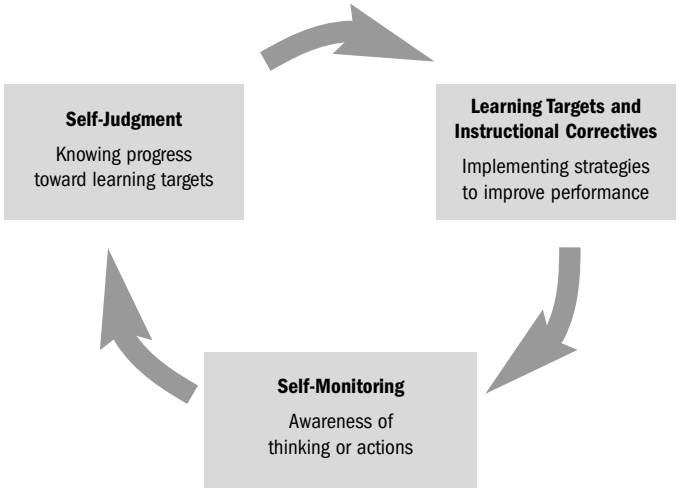

Figure 1. Student Self-Assessment Cycle

The Self-Assessment Process

Self-monitoring, a skill necessary for effective self-assessment, involves focused attention to some aspect of behavior or thinking (Schunk 2004). Self-monitoring students pay deliberate attention to what they are doing, often in relation to external standards. Thus, self-monitoring concerns awareness of thinking and progress as it occurs, and as such, it identifies part of what students do when they self-assess.

A second component of self-assessment, self-judgment, involves identifying progress toward targeted performance. Made in relation to established standards and criteria, these judgments give students a meaningful idea of what they know and what they still need to learn (Bruce 2001). The standards are benchmarks and the criteria are guidelines for

interpreting the level of performance students have demonstrated. The development and application of criteria in evaluating current performance enable meaningful evaluations, as long as the criteria are appropriately challenging (Rolheiser and Ross 2001). According to Rolheiser and Ross, "Students who are taught self-evaluation skills are more likely to persist on difficult tasks, be more confident about their ability, and take greater responsibility for their work" (Section 5A).

The third essential step is that students choose subsequent learning goals and activities to improve partially correct answers, to correct misunderstandings, and to extend learning. Because students at this stage need skills in determining learning targets and further instruction that will enhance their learning, they should be aware of options for further goals and instruction. Once the appropriate "instructional correctives," as they are referred to, are complete, students resume self-monitoring.

The growing literature on formative assessment has implications for self-assessment. Formative assessment can be defined as employing appropriate activities to provide feedback to enhance student motivation and achievement during instruction—as students learn. Providing helpful information *as learning occurs* contrasts with providing feedback solely after instruction. There is substantial evidence that appropriate formative assessment activities relate positively to student motivation and achievement (Black and Wiliam 1998). In addition, self-assessment is a valuable skill in effective formative assessment. Both Sadler (1989) and Black and Wiliam (1998) contend that self-assessment is essential to using feedback appropriately. Indeed, according to Black and Wiliam it is "a *sine qua non* for effective learning" (p. 26).

A Theoretical Rationale for Enhancing Self-Assessment

Theories from at least three areas of study provide convincing rationales for nurturing and enhancing student self-assessment. These areas include 1) cognitive and constructivist theories of learning and motivation, 2) metacognition theory, and 3) self-efficacy theory.

Cognitive and Constructivist Learning and Motivation Theories

Self-assessment is an essential component of cognitive and constructivist theories of learning and motivation. Shepard (2001) points out that student self-monitoring of learning and thinking is important in the knowledge construction that lies at the heart of such theory. That is, students construct meaning, in part, by self-assessing prior to and during learning. Students organize, evaluate, and internalize when learning, and self-assessment is part of that process. They must connect new knowledge, understandings, and skills with what they have already stored and used. Self-assessment fosters students' ability to make these connections

themselves; provides a mechanism to enhance learning in a meaningful, rather than rote, manner; and results in greater student motivation and confidence.

The goal-theory perspective on motivation represents a cognitive theory about how students internalize different types of ability goals and the effects of those goals on self-assessment, persistence, and achievement. The research has focused on two types of goals: *mastery goals* and *performance goals* (Dweck 1996).

- A mastery goal is one in which the student focuses on the task at hand and what needs to be done to improve knowledge, understanding, and skill. With this orientation, students reach mastery through such cognitive processes as thinking, self-monitoring, and generating solutions. Additionally, students will tend to immerse themselves in the task and continually check their progress.
- In contrast, performance goals focus on the outcome and whatever can be done to ensure the outcome; the final score or grade receives more attention than attaining improved understanding. This orientation promotes negative self-concepts about ability to perform and reinforces conformity to what will best ensure a positive outcome, which becomes more important than process or actual improvements in understanding and skills. Obtaining the required score and being judged "proficient" are more important than learning.

A performance goal makes the monitoring and evaluation of learning external; mastery goals make the process of monitoring and evaluating, to some extent, internal. Self-assessment is integral to a mastery goal orientation, for it is a skill that enables students to know how well they are progressing in their knowledge and skills. Conversely, a performance orientation relies on the teacher and others to schedule learning tasks, to determine success or failure, and to evaluate the final product. Improving self-assessment skills promotes a mastery orientation, with all the positives of that process.

Metacognition

Metacognition, which has been widely investigated and reported in both educational and psychological literature, involves the capacity to monitor, evaluate, and know what to do to improve performance. This includes conscious control of specific cognitive skills such as checking understanding, predicting outcomes, planning activities, managing time, and switching to different learning activities. It is a set of skills that relate positively to increased achievement, and such skills can be taught to students (Schunk 2004). The metacognitive literature provides theory and

empirical evidence that supports both self-monitoring and self-evaluation as two of many possible metacognitive skills.

Self-Efficacy

Self-assessment plays a significant role in developing self-perceptions that lead to greater motivation. It is well established that student engagement depends upon students' self-efficacy beliefs—perceptions of their ability to do well on a specific task, and the value of doing well (Pintrich and Schunk 2002; Schunk 2004). Self-efficacy involves students estimating what they can do and the likelihood of successful performance. Such self-perception develops gradually as students connect their successes and failures to factors they believe have caused the result. It is important to emphasize the influence of situation and context upon self-efficacy. Self-perceptions of competence are part of self-efficacy and refer to beliefs about general ability or knowledge and skills to do well (e.g., "I'm good in math" or "I do well in science classes"). Students with high expectations are more likely to persist; those with low expectations often avoid tasks or give up (Brophy 2004). Positive self-evaluations encourage students to commit more resources to continued study and set higher goals in the future (Schunk 1995).

Students need to self-assess to know when they are learning, how much effort they must expend for success, when they have been successful, when they are wrong, and which learning strategies work well for them. Accurate self-evaluation enables students to see what they have mastered and identify what needs further work. Students who experience success with moderately difficult and challenging tasks will attribute their success to ability and effort rather than to external attributions such as luck or help from other students. Making these internal attributions is, in turn, based on the ability of students to self-assess and self-evaluate. This knowledge helps students develop self-efficacy for future performance in similar tasks.

Implications for Practice

For classroom teachers, student self-assessment develops an awareness of which metacognitive strategies to use and when to use them. Teachers and students learn these skills when they establish clear learning goals and articulate evaluative criteria that enable students to assess their own work. Those practices engage students as they actively participate in the learning process and become more connected and committed to the learning outcomes. Student self-assessment also mandates that teachers learn to pass the evaluative responsibilities to their students by scaffolding and modeling goal setting, evaluation, strategy adjustment, and reflection. (Scaffolding, whose purpose is to shift responsibility to

the students, requires teachers to step back and serve as a coach and consultant as students learn from their own experiences [Joyce, Weil, and Calhoun 2005].) Additionally, students who believe that they can successfully complete a task are more motivated and engaged. Teachers should therefore maintain high expectations of performance as students establish goals and work through their self-evaluations. That way, student self-assessment in the classroom establishes clear learning targets, defines evaluative criteria, provides tools for assessment, and allows time for reflection.

Clear Learning Targets and Criteria

Establishing clear learning targets helps students understand what they should learn and participate in developing evaluation criteria and quality benchmarks (Bruce 2001). According to the research by Schunk (1989) and Zimmerman (1989), students achieved more when they set specific goals for themselves. Those studies show that student performance can be improved simply by having students self-report their learning. Students must also understand the process goals of reaching the established learning objectives, since they are more satisfied with their performance when they can evaluate their work; providing clear steps enables them to reach their goals and results in higher levels of self-efficacy (Kitsantas, Reiser, and Doster 2004). Teachers can allow students to make choices from a predetermined range of activities, which individualizes instruction while allowing students to work at their appropriate levels. Restricting the range of choices ensures that the activities align with the curriculum and balances the cognitive challenge with opportunities for success (Pintrich and Schunk 1996). In addition, providing evaluation criteria through rubrics, models, or anonymous exemplars helps students concretely understand outcomes and expectations. They then begin to understand and internalize the steps necessary to meet the goals. However, not all rubrics are equal: to promote learning they should indicate levels of proficiency, not just scores for grades (Bruce 2001). That information can provide learning benchmarks along the way. Such awareness of the learning process is the first step in training students to gauge their own performance as an informational, rather than a judgmental, matter.

Self-evaluation

Once students understand the goals and criteria, they must have opportunities to evaluate their own performance and make adjustments. Teachers should use this opportunity to convey the concept that mastery is controllable and that the goal is knowledge attainment, not just task completion (Pintrich and Schunk 1996). Using domain-specific

goals and subgoals, combined with positive attributional feedback, will increase students' persistence toward the greater goal (Schunk 1996) as they feel the sense of accomplishment that comes from applying effective learning strategies.

Finally, students must be able to make adjustments to their work *prior to* graded evaluation. At this point students react to feedback and adjust their strategies, typically through rubrics, rating forms, or visual organizers. These concrete self-evaluation methods provide objective feedback and identify specific areas of strength or weakness. The feedback serves as a form of item analysis that can be further used to guide instruction and better meet the students' needs.

Reflection

Reflection is a critical part of the self-evaluation process. Reflection helps students think about what they know or have learned while they identify areas of confusion, so they can create new goals. Evaluating what they learned, what they still need to work on, and how they can get there can all support deeper understanding rather than superficial knowledge. Students benefit from explaining their work and their own evaluation of quality through reflective activities such as conferences, written correspondence with parents or peers, and written self-reflections or checklists.

To help teachers implement student self-assessment in the classroom, Rolheiser (1996) identifies four stages of teaching student self-assessment (see Figure 2, next page). At each stage, initiating different levels of teacher and student involvement gradually gives students less structure and specific direction and more responsibility and freedom. In stage 1, teachers involve students in determining criteria. Often students brainstorm ideas and negotiate with teachers to arrive at final criteria that are specific, immediately applicable, and moderately difficult. In this early stage it is important to use students' language in naming and describing criteria.

In stage 2 the teacher shows students how to apply the criteria to evaluate work samples. Providing examples of evaluated work helps students understand, specifically, the meaning of the criteria and how to use them. Students need to practice classifying products using the established criteria. Cooperative learning groups can effectively facilitate this process.

In the third stage teachers provide students feedback concerning their application of the criteria. At this point it is helpful if they show students qualitatively different products to illustrate how criteria are applied. This process requires feedback not about whether an answer or product is correct but rather about how well students understand and

apply the criteria. Discussion allows students to resolve questions and uncertainties about the criteria. Feedback should clearly relate to the criteria and, eventually, students should be able to initiate feedback themselves to justify their ratings and initiate a dialogue with the teacher about self-evaluation.

The last stage involves identifying subsequent learning goals and strategies that can attain the goals. Initially, the teacher determines the goals and strategies; eventually students construct their own goals and strategies with teacher guidance. Thus, teachers fully integrate self-assessment into their teaching in stages 3 and 4, when they can give students feedback about self-assessments as well as future instructional goals and learning strategies.

Stage 1 ➡ Stage 2 ➡ Stage 3 ➡ Stage 4

Level of Implementation	*Establishing Criteria*	*Teaching Students How to Apply Criteria*	*Providing Feedback to Students on Application of Criteria*	*Setting Learning Goals and Strategies*
Beginning	Criteria given to students for their reaction	Examples of applying criteria given to students	Teacher provides feedback	Goals and strategies determined by teacher
Intermediate	Students select criteria from a menu of possibilities	Teacher describes how to apply criteria	Feedback provided by both teacher and students	A menu of goals and strategies is provided by the teacher
Full	Students generate criteria	Teacher models how criteria apply	Teacher engages students in justifying their feedback	Student constructs goals and strategies

Figure 2. Growth Scheme for Teacher Implementation of Stages of Student Self-Assessment. Adapted from Rolheiser (1996).

Rolheiser's "growth scheme" is useful to check how often teachers use student self-evaluation and to determine any necessary improvements in the process. Modifications are needed at different grade levels, but even elementary students can understand and apply criteria to evaluate their own and others' work. For example, rather than emphasize direct instruction in helping students understand criteria, teachers can help students identify criteria by examining examples of good and not-so-good products. At lower levels teachers can simply provide a list of additional learning activities; higher-level students generate their own ideas about what they need to do.

Student involvement in determining how to self-assess is particularly valuable. It enhances student motivation by providing a sense of ownership and responsibility. Engagement also increases intrinsic motivation to base performance more on competence and less on rewards for performance.

Summary

We believe that student self-assessment, defined as a dynamic process in which students self-monitor, self-evaluate, and identify correctives to learn, is a critical skill that enhances student motivation and achievement. In the current era of high-stakes accountability there is considerable pressure to focus only on student performance and to minimize the extent to which self-assessment is taught, experienced, and encouraged. Self-assessment represents a process that every teacher can emphasize. As we have indicated, ample research and theory document the importance of self-assessment. When students set goals that aid their improved understanding, and then identify criteria, self-evaluate their progress toward learning, reflect on their learning, and generate strategies for more learning, they will show improved performance with meaningful motivation. Surely, those steps will accomplish two important goals—improved student self-efficacy and confidence to learn—as well as high scores on accountability tests.

References

Black, P., and D. Wiliam. 1998. "Assessment and Classroom Learning." *Assessment in Education* 5(1): 7–74.

Brophy, J. 2004. *Motivating Students to Learn.* 2nd ed. Mahwah, N.J.: Lawrence Erlbaum.

Bruce, L. B. 2001. "Student Self-Assessment: Making Standards Come Alive." *Classroom Leadership* (5)1. Retrieved January 31, 2006, from <http://www.ascd.org/portal/site/ascd/template.MAXIMIZE/menuitem.29d4046bbea38f2eb>.

Dweck, C. 1996. "Social Motivation: Goals and Social-Cognitive Processes." In *Social Motivation,* ed. J. Juvnen and K. R. Wentzel. New York: Cambridge University Press.

Joyce, B., M. Weil, and E. Calhoun. 2005. *Models of Teaching*. 5th ed. Boston: Allyn & Bacon.

Kitsantas, A., R. Reiser, and J. Doster. 2004. "Developing Self-Regulated Learners: Goal Setting, Self-evaluation, and Organizational Signals during Acquisition of Procedural Skills." *Journal of Experimental Education* 72: 269–288.

Pintrich, P. R., and D. H. Schunk. 1996. *Motivation in Education: Theory, Research, and Applications.* Englewood Cliffs, N.J.: Merrill/Prentice Hall.

———. 2002. *Motivation in Education: Theory, Research, and Applications.* 2nd ed. Englewood Cliffs, N.J.: Merrill/Prentice Hall.

Rolheiser, C., ed. 1996. *Self-evaluation . . . Helping Students Get Better at It! A Teacher's Resource Book.* Toronto: Cooperative Learning Evaluation &

Assessment Research Group.
Rolheiser, C., and J. A. Ross. 2001. "Student Self-Evaluation: What Research Says and What Practice Shows." Retrieved November 23, 2005, from <http://www.cdl.org/resource-library/articles/self_eval.php?type=subject&id=4>.
Sadler, D. R. 1989. "Formative Assessment and the Design of Instructional Systems." *Instructional Science* 18(2): 119–144.
———. 1998. "Formative Assessment: Revisiting the Territory." *Assessment in Education* 5(1): 77–84.
Schunk, D. H. 1989. "Social-Cognitive Theory and Self-regulated Learning." In *Self-regulated Learning and Academic Achievement: Theory, Research and Practice*, ed. D. H. Schunk and B. J. Zimmerman, 83–110. New York: Springer-Verlag.
———. 1995. Goal and self-evaluative influences during children's mathematical skill acquisition. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, April.
———. 1996. Attributions and the development of self-regulatory competence. Paper presented at the annual meeting of the American Educational Research Association, New York, April.
———. 2004. *Learning Theories: An Educational Perspective*. Upper Saddle River, N.J.: Merrill Prentice/Hall.
Shepard, L. A. 2001. "The Role of Classroom Assessment in Teaching and Learning." In *Handbook of Research on Teaching,* ed. V. Richardson, 4th ed. Washington, D.C.: American Educational Research Association.
Zimmerman, B. J. 1989. "Becoming a Self-Regulated Learner: An Overview." In *Theory into Practice.* Retrieved June 10, 2006, from <http://www.sfu.ca/~sbratt/SRL/Becoming%20a%20self-regulated%20learner%20an%20overview.pdf>.

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