Assessment Through the Student's Eyes

Rick Stiggins

Rather than sorting students into winners and losers, assessment for learning can put all students on a winning streak.

Historically, a major role of assessment has been to detect and highlight differences in student learning in order to rank students according to their achievement. Such assessment experiences have produced winners and losers. Some students succeed early and build on winning streaks to learn more as they grow; others fail early and often, falling farther and farther behind.

As we all know, the mission of schools has changed. Today's schools are less focused on merely sorting students and more focused on helping all students succeed in meeting standards. This evolution in the mission of schools means that we can't let students who have not yet met standards fall into losing streaks, succumb to hopelessness, and stop trying.

Our evolving mission compels us to embrace a new vision of assessment that can tap the wellspring of confidence, motivation, and learning potential that resides within every student. First, we need to tune in to the emotional dynamics of the assessment experience from the point of view of students—both assessment winners and assessment losers. These two groups experience assessment practices in vastly different ways, as shown in "The Assessment Experience," p. 24. To enable all students to experience the productive emotional dynamics of winning, we need to move from exclusive reliance on assessments that verify learning to the use of assessments that support learning—that is, assessments for learning.

<table>
<thead>
<tr>
<th>The Assessment Experience</th>
<th>For Students on Losing Streaks</th>
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<tbody>
<tr>
<td><strong>For Students on Winning Streaks</strong></td>
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<tr>
<td></td>
<td><strong>Assessment results provide</strong></td>
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<tr>
<td>Continual evidence of success</td>
<td>Continual evidence of failure</td>
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<tr>
<td></td>
<td><strong>The student feels</strong></td>
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<tr>
<td>Hopeful and optimistic</td>
<td>Hopeless</td>
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<tr>
<td>Empowered to take productive action</td>
<td>Initially panicked, giving way to resignation</td>
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**The student thinks**

<table>
<thead>
<tr>
<th>It's all good. I'm doing fine.</th>
<th>This hurts. I'm not safe here.</th>
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<tbody>
<tr>
<td>See the trend? I succeed as usual.</td>
<td>I just can't do this . . . again.</td>
</tr>
<tr>
<td>I want more success.</td>
<td>I'm confused. I don't like this—help!</td>
</tr>
<tr>
<td>School focuses on what I do well.</td>
<td>Why is it always about what I can't do?</td>
</tr>
<tr>
<td>I know what to do next.</td>
<td>Nothing I try seems to work.</td>
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<tr>
<td>Feedback helps me.</td>
<td>Feedback is criticism. It hurts.</td>
</tr>
<tr>
<td>Public success feels good.</td>
<td>Public failure is embarrassing.</td>
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**The student becomes more likely to**

<table>
<thead>
<tr>
<th>Seek challenges.</th>
<th>Seek what's easy.</th>
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<tr>
<td>Seek exciting new ideas.</td>
<td>Avoid new concepts and approaches.</td>
</tr>
<tr>
<td>Practice with gusto.</td>
<td>Become confused about what to practice.</td>
</tr>
<tr>
<td>Take initiative.</td>
<td>Avoid initiative.</td>
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**Article 1**

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<thead>
<tr>
<th>Persist in the face of setbacks.</th>
<th>Give up when things become challenging.</th>
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<tbody>
<tr>
<td>Take risks and stretch—go for it!</td>
<td>Retreat and escape—trying is too dangerous!</td>
</tr>
</tbody>
</table>

**These actions lead to**

<table>
<thead>
<tr>
<th>Self-enhancement</th>
<th>Self-defeat, self-destruction</th>
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<tbody>
<tr>
<td>Positive self-fulfilling prophecy</td>
<td>Negative self-fulfilling prophecy</td>
</tr>
<tr>
<td>Acceptance of responsibility</td>
<td>Denial of responsibility</td>
</tr>
<tr>
<td>Manageable stress</td>
<td>High stress</td>
</tr>
<tr>
<td>Feeling that success is its own reward</td>
<td>No feelings of success; no reward</td>
</tr>
<tr>
<td>Curiosity, enthusiasm</td>
<td>Boredom, frustration, fear</td>
</tr>
<tr>
<td>Continuous adaptation</td>
<td>Inability to adapt</td>
</tr>
<tr>
<td>Resilience</td>
<td>Yielding quickly to defeat</td>
</tr>
<tr>
<td>Strong foundations for future success</td>
<td>Failure to master prerequisites for future success</td>
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**Assessment for Learning**

Assessment for learning turns day-to-day assessment into a teaching and learning process that enhances (instead of merely monitoring) student learning. Extensive research conducted around the world shows that by consistently applying the principles of assessment for
learning, we can produce impressive gains in student achievement, especially for struggling learners (Black & Wiliam, 1998).

Assessment for learning begins when teachers share achievement targets with students, presenting those expectations in student-friendly language accompanied by examples of exemplary student work. Then, frequent self-assessments provide students (and teachers) with continual access to descriptive feedback in amounts they can manage effectively without being overwhelmed. Thus, students can chart their trajectory toward the transparent achievement targets their teachers have established.

The students' role is to strive to understand what success looks like, to use feedback from each assessment to discover where they are now in relation to where they want to be, and to determine how to do better the next time. As students become increasingly proficient, they learn to generate their own descriptive feedback and set goals for what comes next on their journey.

Teachers and students are partners in the assessment for learning process. For example, teachers might have students study samples of work that vary in quality and collaborate in creating their own student-friendly version of a performance assessment scoring rubric. Or students might create practice versions of multiple-choice tests that parallel the content of an upcoming final exam, which they can then use to analyze their own strengths and weaknesses and to focus their final preparation for that exam. Students can accumulate evidence of their learning in growth portfolios. They can also become partners with teachers in communicating about their own learning successes by leading their parent/teacher conferences.

Assessment for learning provides both students and teachers with understandable information in a form they can use immediately to improve performance. In this context, students become both self-assessors and consumers of assessment information. As they experience and understand their own improvement over time, learners begin to sense that success is within reach if they keep trying. This process can put them on a winning streak and keep them there.

When we use assessment for learning, assessment becomes far more than merely a one-time event stuck onto the end of an instructional unit. It becomes a series of interlaced experiences that enhance the learning process by keeping students confident and focused on their progress, even in the face of occasional setbacks.

The goal of assessment for learning is not to eliminate failure, but rather to keep failure from becoming chronic and thus inevitable in the mind of the learner. Duke University basketball coach Mike Krzyzewski has pointed out that the key to winning is to avoid losing twice in a row (Kanter, 2004, p. 251). He meant that if you lose once and fix it, you can remain confident. Losing twice, though, can raise questions, crack that confidence, and make recovery more difficult. So when learners suffer a failure, we must get them back to success as quickly as possible to restore their confidence in their capabilities. This is the emotional dynamic of assessment for learning.

**Scenario 1: Set Students Up for Success**

Here is an example of the use of assessment for learning that builds student confidence from the start. Notice who develops and uses the assessment.

A high school English teacher assigns students to read three novels by the same author and develop a thesis statement about a common theme, consistent character development, or social commentary in the novels. They must then defend that thesis in a term paper with references. To set students up for success, the teacher begins by providing them with a
Article 1

sample of an outstanding paper to read and analyze. The next day, the class discusses what made the sample outstanding.

As their next assignment, the teacher gives students a sample paper of poor quality. Again, they analyze and evaluate its features in some detail. Comparing the two papers, students list essential differences. The class then uses this analysis to collaboratively decide on the keys to a high-quality paper.

After identifying and defining those keys, the students share in the process of transforming them into a rubric—a set of rating scales depicting a continuum of quality for each key. The teacher provides examples of student work to illustrate each level on the quality continuum.

Only after these specific understandings are in place do students draft their papers. Then they exchange drafts, analyzing and evaluating one another’s work and providing descriptive feedback on how to improve it, always using the language of the rubric. If students want descriptive feedback from their teacher on any particular dimension of quality, they can request and will receive it. The paper is finished when the student says it is finished. In the end, not every paper is outstanding, but most are of high quality, and each student is confident of that fact before submitting his or her work for final evaluation and grading (Stiggins, in press; Scenario 1 adapted by permission).

Scenario 2: Help Students Turn Failure into Success

Here is an illustration of assessment for learning in mathematics used to help a struggling elementary student find the path to recovery from a chronic sense of failure. Notice how the teacher highlights the meaning of success and turns the responsibility over to the student. In addition, notice how the learner has already begun to internalize the keys to her own success.

Gail is a 5th grader who gets her math test back with “60 percent” marked at the top. She knows this means another F. So her losing streak continues, she thinks. She's ready to give up on ever connecting with math.

But then her teacher distributes another paper—a worksheet the students will use to learn from their performance on the math test. What's up with this? The worksheet has several columns. Column one lists the 20 test items by number. Column two lists what math proficiency each item tested. The teacher calls the class's attention to the next two columns: Right and Wrong. She asks the students to fill in those columns with checks for each item to indicate their performance on the test. Gail checks 12 right and 8 wrong.

The teacher then asks the students to evaluate as honestly as they can why they got each incorrect item wrong and to check column five if they made a simple mistake and column six if they really don’t understand what went wrong. Gail discovers that four of her eight incorrect answers were caused by careless mistakes that she knows how to fix. But four were math problems she really doesn't understand how to solve.

Next, the teacher goes through the list of math concepts covered item by item, enabling Gail and her classmates to determine exactly what concepts they don't understand. Gail discovers that all four of her wrong answers that reflect a true lack of understanding arise from the same gap in her problem-solving ability: subtracting 3-digit numbers with regrouping. If she had just avoided those careless mistakes and had also overcome this one gap in understanding, she might have received 100 percent. Imagine that! If she could just do the test over . . .

She can. Because Gail's teacher has mapped out precisely what each item on the test measures, the teacher and students can work in partnership to group the students according
to the math concepts they haven't yet mastered. The teacher then provides differentiated instruction to the groups focused on their conceptual misunderstandings. Together the class also plans strategies that everyone can use to avoid simple mistakes. When that work is complete, the teacher gives students a second form of the same math test. When Gail gets the test back with a grade of 100 percent, she jumps from her seat with arms held high. Her winning streak begins (Stiggins, Arter, Chappuis, & Chappuis, 2004; Scenario 2 adapted by permission).

**Redefining Our Assessment Future**

We know how to deliver professional development that will give practitioners the tools and technologies they need to use assessment effectively in the service of student success. (Stiggins et al., 2004; Stiggins & Chappuis, 2006). Thus far, however, the immense potential of assessment for learning has gone largely untapped because we have failed to deliver the proper tools into the hands of teachers and school leaders. If we are to fulfill our mission of leaving no child behind, we must adjust our vision of excellence in assessment in at least two important ways that will help us balance assessment of and assessment for learning.

First, we must expand the criteria by which we evaluate the quality of our assessments at all levels and in all contexts. Traditionally, we have judged quality in terms of the attributes of the resulting scores; these scores must lead to valid and reliable inferences about student achievement. As a result, schools have lavished attention on characteristics of the instruments that produce such scores. In the future, however, we must recognize that assessment is about far more than the test score's dependability—it also must be about the score's effect on the learner. Even the most valid and reliable assessment cannot be regarded as high quality if it causes a student to give up.

We must begin to evaluate our assessments in terms of both the quality of the evidence they yield and the effect they have on future learning. High-quality assessments encourage further learning; low-quality assessments hinder learning. Understanding the emotional dynamics of the assessment experience from the student's perspective is crucial to the effective use of assessments to improve schools.

Second, we must abandon the limiting belief that adults represent the most important assessment consumers or data-based decision makers in schools. Students' thoughts and actions regarding assessment results are at least as important as those of adults. The students' emotional reaction to results will determine what they do in response. Whether their score is high or low, students respond productively when they say, “I understand. I know what to do next. I can handle this. I choose to keep trying.” From here on, the result will be more learning. The counterproductive response is, “I don't know what this means. I have no idea what to do next. I'm probably too dumb to learn this anyway. I give up.” Here, the learning stops.

In standards-driven schools, only one of these responses works, especially for students who have yet to meet standards. Assessment for learning is about eliciting that productive response to assessment results from students every time. It can produce winning streaks for all students.

**References**


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Learning to Love Assessment

Carol Ann Tomlinson

From judging performance to guiding students to shaping instruction to informing learning, coming to grips with informative assessment is one insightful journey.

When I was a young teacher—young both in years and in understanding of the profession I had entered—I nonetheless went about my work as though I comprehended its various elements. I immediately set out to arrange furniture, put up bulletin boards, make lesson plans, assign homework, give tests, compute grades, and distribute report cards as though I knew what I was doing.

I had not set out to be a teacher, and so I had not really studied education in any meaningful way. I had not student taught. Had I done those things, however, I am not convinced that my evolution as a teacher would have been remarkably different. In either case, my long apprenticeship as a student (Lortie, 1975) would likely have dominated any more recent knowledge I might have acquired about what it means to be a teacher. I simply "played school" in the same way that young children "play house"—by mimicking what we think the adults around us do.

The one element I knew I was unprepared to confront was classroom management. Consequently, that's the element that garnered most of my attention during my early teaching years. The element to which I gave least attention was assessment. In truth, I didn't even know the word assessment for a good number of years. I simply knew I was supposed to give tests and grades. I didn't much like tests in those years. It was difficult for me to move beyond their judgmental aspect. They made kids nervous. They made me nervous. With no understanding of the role of assessment in a dynamic and success-oriented classroom, I initially ignored assessment when I could and did it when I had to.

Now, more than three decades into the teaching career I never intended to have, it's difficult for me to remember exactly when I had the legion of insights that have contributed to my growth as an educator. I do know, however, that those insights are the milestones that mark my evolution from seeing teaching as a job to seeing teaching as a science-informed art that has become a passion.

Following are 10 understandings about classroom assessment that sometimes gradually and sometimes suddenly illuminated my work. I am not finished with the insights yet because I am not finished with my work as a teacher or learner. I present the understandings in something like the order they unfolded in my thinking.

The formulation of one insight generally prepared the way for the next. Now, of course, they are seamless, interconnected, and interdependent. But they did not come to me that way. Over time and taken together, the understandings make me an advocate of informative assessment—a concept that initially played no conscious role in my work as a teacher.

Understanding 1: Informative assessment isn't just about tests.

Initially I thought about assessment as test giving. Over time, I became aware of students who did poorly on tests but who showed other evidence of learning. They solved problems well, contributed to discussions, generated rich ideas, drew sketches to illustrate, and role-played. When they wanted to communicate, they always found a way. I began to realize that when I gave students multiple ways to express learning or gave them a say in how they could...
show what they knew, more students were engaged. More to the point, more students were learning.

Although I still had a shallow sense of the possibilities of assessment, I did at least begin to try in multiple ways to let kids show what they knew. I used more authentic products as well as tests to gain a sense of student understanding. I began to realize that when one form of assessment was ineffective for a student, it did not necessarily indicate a lack of student success but could, in fact, represent a poor fit between the student and the method through which I was trying to make the student communicate. I studied students to see what forms of assessment worked for them and to be sure I never settled for a single assessment as an adequate representation of what a student knew.

**Understanding 2:** Informative assessment really isn't about the grade book.

At about the same time that Understanding 1 emerged in my thinking, I began to sense that filling a grade book was both less interesting and less useful than trying to figure out what individual students knew, understood, or could do. My thinking was shifting from assessment as judging students to assessment as guiding students. I was beginning to think about student accomplishment more than about student ranking (Wiggins, 1993).

Giving students feedback seemed to be more productive than giving them grades. If I carefully and consistently gave them feedback about their work, I felt more like a teacher than a warden. I felt more respectful of the students and their possibilities (Wiggins, 1993). I began to understand the difference between teaching for success and "gotcha" teaching and to sense the crucial role of informative assessment in the former.

**Understanding 3:** Informative assessment isn't always formal.

I also became conscious of the fact that some of the most valuable insights I gleaned about students came from moments or events that I'd never associated with assessment. When I read in a student's journal that his parents were divorcing, I understood why he was disengaged in class. I got a clear picture of one student's misunderstanding when I walked around as students worked and saw a diagram she made to represent how she understood the concept we were discussing. I could figure out how to help a student be more successful in small groups when I took the time to study systematically, but from a distance, what he did to make groups grow impatient with him.

Assessment, then, was more than "tests plus other formats." Informative assessment could occur any time I went in search of information about a student. In fact, it could occur when I was not actively searching but was merely conscious of what was happening around me.

I began to talk in more purposeful ways with students as they entered and left the classroom. I began to carry around a clipboard on which I took notes about students. I developed a filing system that enabled me to easily store and retrieve information about students as individuals and learners. I was more focused in moving around the room to spot-check student work in progress for particular proficiencies. I began to sense that virtually all student products and interactions can serve as informative assessment because I, as a teacher, have the power to use them that way.

**Understanding 4:** Informative assessment isn't separate from the curriculum.

Early in my teaching, I made lesson plans. Later on, I made unit plans. In neither time frame did I see assessment as a part of the curriculum design process. As is the case with many teachers, I planned what I would teach, taught it, and then created assessments. The assessments were largely derived from what had transpired during a segment of lessons and
ultimately what had transpired during a unit of study. It was a while before I understood what Wiggins and McTighe (1998) call *backward design*.

That evolution came in three stages for me. First, I began to understand the imperative of laying out precisely what mattered most for students to know and be able to do—but also what they should understand—as a result of our work together. Then I began to discover that many of my lessons had been only loosely coupled to learning goals. I’d sometimes (often?) been teaching in response to what my students liked rather than in response to crucial learning goals. I understood the need to make certain that my teaching was a consistent match for what students needed to know, understand, and be able to do at the end of a unit. Finally, I began to realize that if I wanted to teach for success, my assessments had to be absolutely aligned with the knowledge, understanding, and skill I’d designated as essential learning outcomes. There was a glimmer of recognition in my work that assessment was a part of—not apart from—curriculum design.

**Understanding 5:** Informative assessment isn’t about "after."

I came to understand that assessments that came at the end of a unit—although important manifestations of student knowledge, understanding, and skill—were less useful to me as a teacher than were assessments that occurred *during* a unit of study. By the time I gave and graded a final assessment, we were already moving on to a new topic or unit. There was only a limited amount I could do at that stage with information that revealed to me that some students fell short of mastering essential outcomes—or that others had likely been bored senseless by instruction that focused on outcomes they had mastered long before the unit had begun. When I studied student work in the course of a unit, however, I could do many things to support or extend student learning. I began to be a devotee of *formative assessment*, although I did not know that term for many years.

It took time before I understood the crucial role of preassessment or diagnostic assessment in teaching. Likely the insight was the product of the embarrassment of realizing that a student had no idea what I was talking about because he or she lacked vocabulary I assumed every 7th grader knew or of having a student answer a question in class early in a unit that made it clear he already knew more about the topic at hand than I was planning to teach. At that point, I began to check early in the year to see whether students could read the textbook, how well they could produce expository writing, what their spelling level was, and so on. I began systematically to use preassessments before a unit started to see where students stood in regard to prerequisite and upcoming knowledge, understanding, and skills.

**Understanding 6:** Informative assessment isn’t an end in itself.

I slowly came to realize that the most useful assessment practices would shape how I taught. I began to explore and appreciate two potent principles of informative assessment. First, the greatest power of assessment information lies in its capacity to help me see how to be a better teacher. If I know what students are and are not grasping at a given moment in a sequence of study, I know how to plan our time better. I know when to reteach, when to move ahead, and when to explain or demonstrate something in another way. Informative assessment is not an end in itself, but the beginning of better instruction.

**Understanding 7:** Informative assessment isn’t separate from instruction.

A second and related understanding hovered around my sense that assessment should teach me how to be a better teacher. Whether I liked it or not, informative assessment always demonstrated to me that my students’ knowledge, understanding, and skill were emerging along different time continuums and at different depths. It became excruciatingly clear that my brilliant teaching was not equally brilliant for everyone in my classes. In other words,
informative assessment helped me solidify a need for differentiation. As Lorna Earl (2003) notes, if teachers know a precise learning destination and consistently check to see where students are relative to that destination, differentiation isn't just an option; it's the logical next step in teaching. Informative assessment made it clear—at first, painfully so—that if I meant for every student to succeed, I was going to have to teach with both singular and group needs in mind.

**Understanding 8:** Informative assessment isn't just about student readiness.

Initially, my emergent sense of the power of assessment to improve my teaching focused on student readiness. At the time, I was teaching in a school with a bimodal population—lots of students were three or more years behind grade level or three or more years above grade level, with almost no students in between. Addressing that expansive gap in student readiness was a daily challenge. I was coming to realize the role of informative assessment in ensuring that students worked as often as possible at appropriate levels of challenge (Earl, 2003).

Only later was I aware of the potential role of assessment in determining what students cared about and how they learned. When I could attach what I was teaching to what students cared about, they learned more readily and more durably. When I could give them options about how to learn and express what they knew, learning improved. I realized I could pursue insights about student interests and preferred modes of learning, just as I had about their readiness needs.

I began to use surveys to determine student interests, hunt for clues about their individual and shared passions, and take notes on who learned better alone and who learned better in small groups. I began to ask students to write to me about which instructional approaches were working for them and which were not. I was coming to understand that learning is multidimensional and that assessment could help me understand learners as multidimensional as well.

**Understanding 9:** Informative assessment isn't just about finding weaknesses.

As my sense of the elasticity of assessment developed, so did my sense of the wisdom of using assessment to accentuate student positives rather than negatives. With readiness-based assessments, I had most often been on the hunt for what students didn't know, couldn't do, or didn't understand. Using assessment to focus on student interests and learning preferences illustrated for me the power of emphasizing what works for students.

When I saw "positive space" in students and reflected that to them, the results were stunningly different from when I reported on their "negative space." It gave students something to build on—a sense of possibility. I began to spend at least as much time gathering assessment information on what students could do as on what they couldn't. That, in turn, helped me develop a conviction that each student in my classes brought strengths to our work and that it was my job to bring those strengths to the surface so that all of us could benefit.

**Understanding 10:** Informative assessment isn't just for the teacher.

Up to this point, much of my thinking was about the teacher—about me, my class, my work, my growth. The first nine understandings about assessment were, in fact, crucial to my development. But it was the 10th understanding that revolutionized what happened in the classrooms I shared with my students. I finally began to grasp that teaching requires a plural pronoun. The best teaching is never so much about me as about us. I began to see my students as full partners in their success.
My sense of the role of assessment necessarily shifted. I was a better teacher—but more to the point, my students were better learners—when assessment helped all of us push learning forward (Earl, 2003). When students clearly understood our learning objectives, knew precisely what success would look like, understood how each assignment contributed to their success, could articulate the role of assessment in ensuring their success, and understood that their work correlated with their needs, they developed a sense of self-efficacy that was powerful in their lives as learners. Over time, as I developed, my students got better at self-monitoring, self-managing, and self-modifying (Costa & Kallick, 2004). They developed an internal locus of control that caused them to work hard rather than to rely on luck or the teacher's good will (Stiggins, 2000).

Assessing Wisely

Lorna Earl (2003) distinguishes between assessment of learning, assessment for learning, and assessment as learning. In many ways, my growth as a teacher slowly and imperfectly followed that progression. I began by seeing assessment as judging performance, then as informing teaching, and finally as informing learning. In reality, all those perspectives play a role in effective teaching. The key is where we place the emphasis.

Certainly a teacher and his or her students need to know who reaches (and exceeds) important learning targets—thus summative assessment, or assessment of learning, has a place in teaching. Robust learning generally requires robust teaching, and both diagnostic and formative assessments, or assessments for learning, are catalysts for better teaching. In the end, however, when assessment is seen as learning—for students as well as for teachers—it becomes most informative and generative for students and teachers alike.

References


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Helping Students Understand Assessment

Jan Chappuis

Formative assessments promote learning when they help students answer three questions: Where am I going? Where am I now? and How can I close the gap?

During the last decade, many schools have begun to emphasize formative assessment. As teachers work to develop short-cycle or common assessments and engage in data-driven decision making, they typically remain in the central decision-making role. This approach reflects the underlying assumption that teachers control learning. Although teachers must create the conditions for learning, however, students ultimately decide whether they feel capable of learning and whether they will do the work. Therefore, students are equally important users of formative assessment information. The research tells us why.

Necessary Components of Formative Assessment

In their 1998 synthesis of research, Black and Wiliam reported that formative assessment produced significant learning gains, with effect sizes between 0.4 and 0.7. They noted, however, that in schools achieving these gains, students were the primary users of formative assessment information. In such schools,

- Formative assessment began with offering students a clear picture of learning targets.
- Students received feedback on their work that helped them understand where they were with respect to the desired learning target.
- Students engaged in self-assessment.
- Formative assessment provided an understanding of specific steps that students could take to improve.

Sadler (1989) had previously reported similar findings. In describing the role of formative assessment in developing expertise, he identified three conditions required for students to improve:

The student comes to hold a concept of quality roughly similar to that held by the teacher, is able to monitor continuously the quality of what is being produced during the act of production itself, and has a repertoire of alternative moves or strategies from which to draw at any given point. (p. 121)

This research on effective formative assessment suggests that students should be able to answer three basic questions: Where am I going? Where am I now? and How can I close the gap? (adapted from Atkin, Black, & Coffey, 2001). The seven strategies described in the following sections can help ensure systematic student involvement in the formative assessment process (Stiggins, Arter, Chappuis, & Chappuis, 2004).

Where Am I Going?

Students need to know what learning targets they are responsible for mastering, and at what level. Marzano (2005) asserts that students who can identify what they are learning significantly outscore those who cannot.

Strategy 1: Provide a clear and understandable vision of the learning target. Share the learning targets before you begin instruction, in language your students can understand. For example, when introducing a reading comprehension unit calling for inference, you might say,
"We are learning to infer. This means we are learning to make reasonable guesses on the basis of clues." Or provide students with a written list of learning targets described in student-friendly language, such as,

We are learning about fractions. We are learning to
- Read and write fractions with halves, thirds, fourths, and tenths.
- Read and write mixed numbers (whole numbers plus fractions).
- Change fractions written as tenths into decimals.

When working with more complex content standards that call for performance assessment, such as "Writes clearly and effectively," introduce the language of the scoring guide that the school will use to define quality. To do this, ask students what they think constitutes good writing, and then help them identify where their concept of good writing matches the concepts in the scoring guide. If the scoring guide is above students' reading level, you might want to create a student-friendly version.

**Strategy 2: Use examples of strong and weak work.** To know where they are going, students must know what excellent performance looks like. Ask students to evaluate anonymous work samples for quality and then to discuss and defend their judgments, using the language of the scoring guide in the case of performance assessments. Such an exercise will help students develop skill in accurate self-assessment.

Teachers often use strong examples, or exemplars, but avoid using weak examples because they worry that students will accidentally emulate them. On the contrary, when students evaluate weak examples that mirror common problems, they become more proficient at identifying their own weaknesses and gain a better understanding of quality. To introduce work samples to students, you might

1. Distribute to students a student-friendly version of the scoring guide you will use to evaluate their final products.
2. Choose one aspect of quality (one trait) to focus on.
3. Show an overhead transparency of a strong anonymous sample, but don't let students know it's a strong example. Have students work independently to score it for the one trait using the student-friendly scoring guide. You may ask students to underline the statements in the scoring guide that they believe describe the work they're examining.
4. After students have settled on a score independently, have them share their scores in small groups, using the language of the scoring guide to explain their reasoning.
5. Ask the class to vote and tally their scores on an overhead transparency. Then ask for volunteers to share their scores and the rationale behind them. Listen for, and encourage, use of the language of the scoring guide.
6. Repeat this process with a weak anonymous sample, focusing on the same trait. Do this several times, alternating between strong and weak papers, until students are able to distinguish between strong and weak work and independently give rationales reflecting the concepts in the scoring guide (Stiggins et al., 2004).

**Where Am I Now?**

When my daughter was in 3rd grade, she once brought home a math paper with a smiley face, a minus 3, and an M at the top. When we asked her what the M meant she had learned, she
looked at us as though we were trying to trick her and replied, "Math?" When we asked her what that meant she needed to work on, she frowned and ventured, "Math?"

Papers marked like this one do not give students the information they need. At best, such marks might tell the student, "I'm doing OK in math," but they will not enable the student to assess his or her own strengths and weaknesses. You can use the following two strategies to help students identify how they are currently performing in relation to the learning and actions that are expected of them.

**Strategy 3: Offer regular descriptive feedback.** Black and Wiliam (1998) recommend that to improve formative assessment, teachers should reduce evaluative feedback—such as "B+. Good work!" or "You didn't put enough effort into this"—and increase descriptive feedback, such as "You maintained eye contact with your audience throughout your whole presentation" or "Your problem-solving strategy for dividing all the people into equal groups worked well right up to the end, but you need to figure out what to do with the remaining people."

The quality of the feedback, rather than its quantity, determines its effectiveness (Bangert-Downs, Kulik, Kulik, & Morgan, 1991; Sadler, 1989). The most effective feedback identifies success and also offers students a recipe for corrective action (Bloom, 1984; Brown, 1994). Grades and other coded marks—such as ✓ + and 92%—do not tell students what areas they need to improve. Instead, such marks signal that the work on this piece is finished.

Here are some simple actions you can take to provide effective feedback:

- After students have practiced using a scoring guide with anonymous work and they understand the meaning of the phrases in the scoring guide, highlight phrases that describe strengths and weaknesses of their work. If you are working with a multitrait scoring guide, limit feedback to one or two traits at a time.

- Have students traffic light their work (Atkin et al., 2001), marking it with a green, yellow, or red dot to indicate the level of help they need. Allow students with green and yellow dots to provide descriptive feedback to one another, while you provide feedback for students with red dots.

**Strategy 4: Teach students to self-assess and set goals.** In giving students descriptive feedback, you have modeled the kind of thinking you want them to do as self-assessors. As a next step, turn that task over to students and guide them in practicing self-assessment and goal setting. You may find it useful to have students identify the strengths and weaknesses of their work before you offer your own feedback. Have them complete a form like the one in Figure 1 and staple it to their work when they turn it in. Respond with your feedback, either on the form or orally.
Figure 1. Student Self-Assessment Form

My Strengths and Areas to Improve
Trait(s): ______________________________________________
Name: __________________________________________________
Name of Paper: _________________________________________
Date: __________________________________________________

My Opinion
My strengths are _______________________________________
________________________________________________________
What I think I need to work on is ______________________
________________________________________________________

My Teacher's or Classmate's Opinion
Strengths include ______________________________________
________________________________________________________
Work on ________________________________________________
________________________________________________________

My Plan
What I will do now is __________________________________
________________________________________________________
Next time I'll ask for feedback from ______________
________________________________________________________


To help students align their expectations with yours, ask them to turn in a scoring guide with their work, highlighting in yellow the phrases in the guide that they believe represent the quality of their work. On the same scoring guide, highlight in blue the phrases that you think describe their work, and return the guide to them. Where the highlighted phrases are green (blue over yellow), your feedback matches the student's self-assessment. Any highlighted phrases that remain blue or yellow, however, indicate areas in which the student probably needs to refine his or her vision of quality (Stiggins et al., 2004).

If you are using a selected-response test, you can arrange the items according to the learning targets they assess and give students the list of learning targets correlated to the test item
numbers. When they receive their corrected test, students can identify which learning targets they have mastered and which learning targets they need to work on further. They can then develop a plan for how they will improve the targeted areas. This practice is especially effective if students have the opportunity to retake the test.

How Can I Close the Gap?
The final essential step in making formative assessment work is to keep students in touch with what they can do to close the gap between where they are now and where they need to be.

Strategy 5: Design lessons to focus on one aspect of quality at a time. This strategy breaks learning into more manageable chunks for students. For example, suppose that students are learning to design and conduct scientific investigations, and one part of the scoring guide describes the qualities of a good hypothesis. If students are having trouble formulating hypotheses, they can refer to that portion of the scoring guide as they differentiate between strong and weak examples of hypotheses, practice drafting hypotheses, give one another descriptive feedback on their drafts, and assess their own drafts' strengths and weaknesses.

Strategy 6: Teach students focused revision. Let students practice revising their work before being held accountable by a final grade. You might begin with one of the anonymous, weak work samples that your students have evaluated (see Strategy 2). Focusing on just the single aspect of quality that they evaluated, ask students to work in pairs to either revise the sample or create a revision plan describing what the anonymous student needs to do to improve the work. Then ask students to apply the same process to their own work, either revising it to make it better or submitting a revision plan. For example, after assessing their draft hypotheses in science, students could use the scoring guide to write out what they need to do to improve their hypotheses.

Strategy 7: Engage students in self-reflection and let them document and share their learning. We know the power of self-reflection to deepen learning for adults. It also works for students. One of the strongest motivators is the opportunity to look back and see progress.

In a skill-based course, such as physical education, students can fill out a daily form that asks two questions: “What are two important things you learned from today's class?” and “What is one goal you have for tomorrow's class?”

Student portfolios can also promote students' self-reflection. In collecting their work and insights in portfolios, students have the opportunity to reflect on their learning, develop an internal feedback loop, and understand themselves better as learners. To use portfolios in this way, students must clearly understand their learning goals, the steps that they have taken toward reaching those goals, and how far they have come. Involving students in parent-teacher conferences can accomplish the same purpose. Students gain insight from explaining to their parents the learning that their work represents, their strengths as learners, and what they plan to work on next.

Students at the Center
The seven strategies described here are designed to help students better understand their learning goals, recognize their own skill level in relation to the goals, and take responsibility for reaching the goals. By expanding our formative assessment practices to systematically involve students as decision makers, teachers acknowledge the contributions that students make to their own success and give them the opportunity and structure they need to become active partners in improving their learning.
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The Best Value in Formative Assessment

Stephen Chappuis and Jan Chappuis

Ready-made benchmark tests cannot substitute for day-to-day formative assessment conducted by assessment-literate teachers.

Recently a school leader asked us to provide an example of a good test item on a formative assessment and then show how that item would be different when used on a summative test. He wanted to explain to his staff the difference between formative and summative assessment. His end goal was for teachers to develop assessments to measure how well students were mastering the content standards that would appear on the state accountability test before the test was given in the spring.

His question reflects the confusion many educators have about formative and summative assessment. This confusion isn't surprising: Definitions of formative assessment abound, resulting in multiple and sometimes conflicting understandings. And in part because of these varying definitions and views, practices labeled as formative assessment in schools today vary widely.

One result of No Child Left Behind has been a surge in student testing—much of it voluntary, going well beyond what federal law or state assessment systems require. Many schools and districts administer tests with names like benchmark, short-cycle, and interim assessments to predict student performance on high-stakes tests and to identify students needing additional help. This increasingly popular level of testing has contributed to the widening scope of what is called formative assessment.

Testing companies in the K–12 education market, seeking to support the trend toward more testing, sometimes advertise products as "formative assessments." This adds to the confusion by encouraging the idea that it's the test itself that's formative (Chappuis, 2005).

In reality, this level of testing is often little more than a series of minisummative tests, not always tightly aligned to what was taught in the classroom. There is nothing inherently formative in such tests—they may or may not be used to make changes in teaching that will lead to greater student learning.

The Difference Between Summative and Formative

What is formative assessment, then? First, it's not a product. That was the central misunderstanding of the administrator who asked for an example of a good formative test item. Even though assessments will continue to be labeled formative or summative, how the results are used is what determines whether the assessment is formative or summative.

To begin, let's look at summative assessment. In general, its results are used to make some sort of judgment, such as to determine what grade a student will receive on a classroom assignment, measure program effectiveness, or determine whether a school has made adequate yearly progress. Summative assessment, sometimes referred to as assessment of learning, typically documents how much learning has occurred at a point in time; its purpose is to measure the level of student, school, or program success.

Formative assessment, on the other hand, delivers information during the instructional process, before the summative assessment. Both the teacher and the student use formative assessment results to make decisions about what actions to take to promote further learning.
It is an ongoing, dynamic process that involves far more than frequent testing, and measurement of student learning is just one of its components.

**Summative Assessment Used in Formative Ways**

Almost any assessment instrument can be used for summative or formative purposes, but some, by design, are better suited to summative use and others to formative use. For example, state assessments, although they may also have some limited formative use, are designed to provide accountability data and to compare schools and districts. Because their primary purpose is summative, the results may not be communicated in ways that teachers and students can easily interpret and work with. Further, the results are often delivered months after the administration of the tests. For these reasons, such state tests usually do not function well in a formative way: They can't contribute much information to guide day-to-day instruction or help determine the next learning steps of individual students.

Benchmark assessments, either purchased by the district from commercial vendors or developed locally, are generally meant to measure progress toward state or district content standards and to predict future performance on large-scale summative tests. A common misconception is that this level of assessment is automatically formative. Although such assessments are sometimes intended for formative use—that is, to guide further instruction for groups or individual students—teachers' and administrators' lack of understanding of how to use the results can derail this intention. The assessments will produce no formative benefits if teachers administer them, report the results, and then continue with instruction as previously planned—as can easily happen when teachers are expected to cover a hefty amount of content in a given time.

Teachers also select or develop their own summative assessments—those that count for a grade. Compared with state and district tests, these classroom assessments can more readily be adapted to formative use because their results are more immediately available and their learning targets have been more recently taught. When teachers know what specific learning target each question or task on their test measures, they can use the results to select and reteach portions of the curriculum that students haven't yet mastered. Carefully designed common assessments can be used this way as well.

Students, too, can use summative test results to make decisions about further study. If the assessment items are explicitly matched to the intended learning targets, teachers can guide students in examining their right and wrong answers in order to answer questions such as these:

- What are my strengths relative to the standards?
- What have I seen myself improve at?
- Where are my areas of weakness?
- Where didn't I perform as desired, and how might I make those answers better?
- What do these results mean for the next steps in my learning, and how should I prepare for that improvement?

For students to make maximum use of these questions to guide further study, however, teachers must plan and allow time for students to learn the knowledge and skills they missed on the summative assessment and to retake the assessment. Lack of time for such learning is one of the biggest hindrances to formatively using summative classroom assessments.
Assessment for Learning

When teachers assess student learning for purely formative purposes, there is no final mark on the paper and no summative grade in the grade book. Rather, assessment serves as practice for students, just like a meaningful homework assignment does. This is formative assessment at its most valuable. Called assessment for learning, it supports learning in two ways:

- Teachers can adapt instruction on the basis of evidence, making changes and improvements that will yield immediate benefits to student learning.
- Students can use evidence of their current progress to actively manage and adjust their own learning. (Stiggins, Arter, Chappuis, & Chappuis, 2006)

Assessment for learning can take many different forms in the classroom. It consists of anything teachers do to help students answer three questions (Atkin, Black, & Coffey, 2001):

Where am I going?

- Give students a list of the learning targets they are responsible for mastering, written in student-friendly language.
- Show students anonymous strong and weak examples of the kind of product or performance they are expected to create and have them use a scoring guide to determine which one is better and why.

Where am I now?

- Administer a nongraded quiz part-way through the learning, to help both teacher and students understand who needs to work on what.
- Highlight phrases on a scoring guide reflecting specific strengths and areas for improvement and staple it to student work.
- Have students identify their own strengths and areas for improvement using a scoring guide.
- Have students keep a list of learning targets for the course and periodically check off the ones they have mastered.

How can I close the gap?

- Give students feedback and have them use it to set goals.
- Have students graph or describe their progress on specific learning targets.
- Ask students to comment on their progress: What changes have they noticed? What is easy that used to be hard? What insights into themselves as learners have they discovered?

When students use feedback from the teacher to learn how to self-assess and set goals, they increase ownership of their own success. In this type of assessment environment, teachers and students collaborate in an ongoing process using assessment information to improve rather than judge learning. It all hinges on the assessment’s ability to provide timely, understandable, and descriptive feedback to teachers and students.
Feedback: The Key Difference

Feedback in an assessment for learning context occurs while there is still time to take action. It functions as a global positioning system, offering descriptive information about the work, product, or performance relative to the intended learning goals. It avoids marks or comments that judge the level of achievement or imply that the learning journey is over.

Effective descriptive feedback focuses on the intended learning, identifies specific strengths, points to areas needing improvement, suggests a route of action students can take to close the gap between where they are now and where they need to be, takes into account the amount of corrective feedback the learner can act on at one time, and models the kind of thinking students will engage in when they self-assess. These are a few examples of descriptive feedback:

- You have interpreted the bars on this graph correctly, but you need to make sure the marks on the x and y axes are placed at equal intervals.
- What you have written is a hypothesis because it is a proposed explanation. You can improve it by writing it as an "if ... then ... " statement.
- The good stories we have been reading have a beginning, a middle, and an end. I see that your story has a beginning and a middle, just like those good stories do. Can you draw and write an ending?
- You have described the similarities between _____ and _____ clearly in this paper, and you have identified key differences. Work on illustrating those differences with concrete examples from the text.

In contrast, the feedback from a summative assessment—whether given in the classroom or in a larger context—tells teachers and students who made it to the learning destination and who didn’t. The assessment’s coded, evaluative feedback—B+, 84%, Meets Standards, Great Job, Proficient, and so on—does not identify individual student strengths and areas needing improvement. It does not offer specific information for course correction.

Advantages of Formative Classroom Assessment

Although all formative assessment practices have the potential to increase student learning, assessment for learning in the classroom offers a number of distinct benefits:

- The timeliness of results enables teachers to adjust instruction quickly, while learning is in progress.
- The students who are assessed are the ones who benefit from the adjustments.
- The students can use the results to adjust and improve their own learning.

When we try to teacher-proof the assessment process by providing a steady diet of ready-made external tests, we lose these advantages. Such tests cannot substitute for the day-to-day level of formative assessment that only assessment-literate teachers are able to conduct. The greatest value in formative assessment lies in teachers and students making use of results to improve real-time teaching and learning at every turn.

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Changing Classroom Practice

Dylan Wiliam

Meeting regularly in teacher learning communities is one of the best ways for teachers to develop their skill in using formative assessment.

Today’s schools face unprecedented challenges in preparing students for the unpredictable demands of the future workplace. In an effort to meet these challenges, a number of policy reforms have focused on raising student achievement. Some (for example, No Child Left Behind) have depended primarily on sanctions, leaving schools and districts to find solutions for themselves. Others have involved curriculum changes, increased use of information technology, or changes in the way schools are governed or organized (for example, charter schools or high school redesign).

The evidence to date is that none of these initiatives has had a large effect. When you control for the demographics of student populations, the net impact on student achievement appears to be effectively zero (Wiliam, 2007).

Thus, it’s hardly surprising that there has been considerable interest in one development that does have a solid body of research showing its effect on student achievement—formative assessment. Five reviews of the research in this area (Black & Wiliam, 1998; Crooks, 1988; Kluger & DeNisi, 1996; Natriello, 1987; Nyquist, 2003) synthesized a total of more than 4,000 research studies undertaken during the last 40 years. The conclusion was clear: When implemented well, formative assessment can effectively double the speed of student learning (Wiliam, 2007).

What happened in response to these findings was predictable. A number of publishers started putting the label "formative" on any assessment that was designed to be administered more often than once a year. Such a label may be legitimate if the assessment is used to shape instruction. For example, the results of standards-based tests might show that teachers are paying too much attention to one standard and not enough to another, allowing the teachers to adjust the curriculum. Or the assessments might indicate that certain students are not making enough progress to reach proficiency on the state test, enabling the school to provide extra instruction for these students.

It is not legitimate, however, to claim that the existing research indicates that such use of standardized benchmark assessments will raise student achievement (Shepard, 2007). Almost all the research reviewed in the five studies mentioned focused on short- and medium-cycle formative assessment, in which the length of the feedback cycle was minutes, hours, or days rather than the weeks or months most commercially available assessments require. Although common assessments, benchmark assessments, interim assessments, and the like play an important role in monitoring student progress and providing system-level information for policymakers, there is no evidence at this time that such assessments increase student achievement (Popham, 2006). Instead of putting their faith in such solutions, schools need to implement the kind of formative assessment that research clearly supports.

The Right Stuff: Effective Formative Assessment

In an article in Educational Leadership two years ago, I and some of my colleagues at Educational Testing Service’s Learning and Teaching Research Center laid out five nonnegotiable components of an effective formative assessment system (Leahy, Lyon, Thompson, & Wiliam, 2005). To tap the full potential of formative assessments, teachers must
• Clarify and share learning intentions and criteria for success with students. For example, some teachers share work samples completed by previous students and have current students discuss which ones are strong and which are weak, and why.

• Engineer effective classroom discussions, questions, and learning tasks. Well-planned questions can prompt students to think and provide teachers with information to adjust instruction. Teachers need to use effective questioning techniques that keep all students engaged and that gauge the understanding of the whole class instead of just selected students.

• Provide feedback that moves learners forward. Comments that address what the student needs to do to improve, linked to rubrics when appropriate, promote further learning more effectively than letter grades do.

• Activate students as the owners of their own learning. For example, have students assess their own work, using agreed-on criteria for success.

• Encourage students to be instructional resources for one another. Peer assessment and feedback is often more acceptable and engaging for students than teacher feedback is.

Since we wrote that article, we have worked with hundreds of schools across the United States, and we have learned a great deal about the kinds of supports that are necessary for implementing effective formative assessment practices. In particular, we have learned that the necessary changes in classroom practice, although often apparently quite modest, are actually difficult to achieve.

For example, a few months ago, an elementary school teacher in northern New Jersey was telling me about her efforts to change her questioning techniques. She wanted to use popsicle sticks with students' names on them as a way of choosing students to answer her questions at random—a technique that increases student engagement and elicits answers from a broad range of students instead of just the usual suspects. However, she was having difficulty calling on specific students because she automatically started most questions with phrases like, "Does anyone know ... ?" Frustrated, she wondered why she was finding this simple change so difficult. This teacher has been teaching for 25 years, and we worked out that, over her career, she has probably asked around half a million questions. When you've done something one way half a million times, doing it another way is going to be pretty difficult!

That's the bad news. The good news is that, if a school understands just how hard effective formative assessment is to implement and puts the right supports in place, the necessary changes are achievable in every classroom. But to bring these changes about, schools need to make sustained investments in a new kind of teacher professional development.

Beyond Traditional Professional Development

A football coach who coached quarterbacks by merely having them read books, watch videotapes of games, and listen to presentations from various experts would probably not last long in the job. These practices have a role to play, of course—but ultimately, success in quarterbacking is about being able to execute the plays.

Knowing that is different from knowing how. But in the model of learning that dominates teacher professional development (as well as most formal education), we assume that if we teach the knowing that, then the knowing how will follow. We assemble teachers in rooms and bring in experts to explain what needs to change—and then we're disappointed when such events have little or no effect on teachers' practice. This professional development model
Formative Assessment That Empowers
Susan Brookhart, Connie Moss and Beverly Long

When a rural district encouraged teachers to turn assessment into ongoing communication, students learned to advance their own learning. So did teachers.

It's a paradox. When teachers hand over to students the power to shape their own learning, the learning that occurs is often more powerful than what would have transpired if the teacher had directed learning activities. Even the most effective teacher can't do students' learning for them. Effective teachers create opportunities that maximize the chances learning will happen. By providing students and teachers with specific, regular feedback on how well students are mastering key concepts and skills, formative assessment helps teachers create such opportunities.

Formative assessment is all about sharing information. Teacher-to-student communication—teachers showing students where teachers believe learning should be headed and what students need to do to get there—is important in formative assessment, just as in conventional assessment. But the power of formative assessment comes from the addition of student-to-teacher communication. Each student shows the teacher all along the way where his or her understanding is deep, shallow, or stalled.

This mutual communication empowers students, makes teachers more effective, and restores students' natural love of learning. Most children begin school excited to learn, yet over time they become more oriented toward grades than toward learning (Brookhart, 2004). Traditional assessment practices that express judgment and foster competition do that to them. Formative assessment, however, replaces judgmental assessment practices with information exchange and cooperation. This kind of assessment convinces students that teachers really want to understand what and how they think, rather than whether they know the "right" answers. Students feel permitted to think for themselves and to openly share their understandings—which frees them to become the driving force in their own learning.

A Districtwide Partnership Fuels Formative Assessment

Recently, teachers in Armstrong School District in western Pennsylvania discovered how fundamentally a focus on formative assessment can transform students' sense of control over their learning—as well as fuel teacher learning. Armstrong is a rural district serving 6,308 students; more than 50 percent of Armstrong's students are economically disadvantaged, and 12 percent receive special education services.

The district participated in a three-year initiative with the Center for Advancing the Study of Teaching and Learning in Pittsburgh. Initially, six teachers came together to learn about implementing formative assessment practices with the ultimate vision of increasing student-teacher communication and students' sense of ownership over learning. These teachers helped spread the initiative across the district. Approximately 85 teachers now meet regularly in small groups to help one another implement formative assessment. More than 60 first-year teachers (who are required to participate) and many seasoned veterans are involved. District administrators make a point of looking for formative assessment practices during classroom visits.

The teachers use the Teaching as Intentional Learning model, which operates on the principle that teachers grow through intentional inquiry related to real questions that come up in their classroom practice (Moss, 2001).
During the years we observed the Armstrong teachers intentionally working formative assessment into their teaching, we heard teachers talk a lot about the connection between formative assessment and student motivation. Over and over, teachers saw students get excited as formative assessment provided them more awareness of and control over their own learning. Armstrong teachers became excited too as they watched self-efficacy and self-regulation skills kick in for formerly unmotivated students. As one teacher noted, I have learned not to underestimate the hand that students play in their own learning. ... If students are taught the importance of using specific strategies, if they understand how to use those strategies, and if they understand what they do well and what they need to work on, they will be empowered to improve.

Formative assessment contributes to student ownership of learning more than any other classroom-based practice. Bloom (1984) found that student achievement, motivation, and time on task were significantly higher in classes characterized by formative assessment (a key element of Bloom's mastery-learning approach), even compared with students taught by the same teacher with more conventional methods.

Armstrong's focus on formative assessment has led to increases in achievement, motivation, time on task, and engagement for students working with participating teachers (Brookhart, Moss, & Long, 2008). According to their journal entries and responses to a survey, teachers have seen positive effects on students' learning; on students' feelings of competence (self-efficacy); and on students' perceptions that they have the necessary tools to help advance their own learning (self-regulation).

State test results indicate that the percentage of students scoring at the Basic and Below Basic levels has decreased dramatically at every grade level throughout the years teachers have been involved in the initiative. For example, the percentage of 3rd graders scoring at Below Basic on the state reading test dropped from 13.4 percent in 2006 to 6.1 percent in 2008. When the scores for 3rd graders receiving Title I funds are separated out, the results are even more striking: Only 7.4 percent scored at Below Basic in 2008, compared with 22.2 percent in 2006.

**Glimpses of Increased Ownership**

We spot examples of student ownership of learning every time we observe the classrooms of Armstrong teachers. One elementary reading teacher, for example, changed the look and feel of her class to promote independent work. She established flexible centers and taught students several self- and peer-assessment strategies. One such strategy involves placing three sheets of construction paper—green, yellow, and red—on a desk. Students quiz one another on sight words, definitions, or other content written on a flash card. If the student being quizzed gives an immediate correct response, the questioner lays the flash card on the green paper; if the answerer hesitates or self-corrects, the card goes on the yellow paper; and for an incorrect response, it goes on the red paper.

We observed two 6-year-old boys quizzing each other on sight words. Mike, the quizzer, held up the word any. Kerry responded a, then corrected himself and said, Amy. Kerry's eyes moved expectantly to the yellow paper, but Mike laid the card on the red. "Hey," exclaimed Kerry, visibly upset. With a withering look and a perfect dead-pan expression, Mike said, "It ain't Amy."

Granted, Mike should have told Kerry what the word was, not just what it was not. But it was clear that these boys were engaged and in charge of their own learning. Their assessment of each other was for learning, not for a grade, and they cared about where those flash cards were placed. More interesting, although more subtle, was seeing both boys' expectations play out. Both monitored their responses, knew (mostly) whether they were right or wrong, self-corrected, and intentionally aimed for the green. We could see all this in their faces before a flash card ever landed.
In another classroom, we watched 7th graders use a checklist and rubric they had created to plan, monitor, and refine their drawings of the water cycle and the paragraph they wrote to describe the relationships among evaporation, condensation, precipitation, transpiration, and surface run-off. As their science teacher walked through the room, he commented on positive aspects of each student's work and mentioned connections between the work and the rubric's criteria for success. But it was the students who spent many class periods engrossed in checking the accuracy and quality of their drawings and text, improving both as they got closer to a polished product.

As formative assessment permeated the learning routines of these teachers' classrooms and as students increasingly got into the habit of assessing ongoing learning, student ownership expanded to broader learning outside the classroom. Knowing that repeated reading enhances students' oral fluency, one reading specialist had students create and use a take-home folder for fluency practice. Each night, 1st grade students read out loud to an adult at home and had that adult sign a journal indicating that practice had taken place. One challenged reader, Barry, arrived at his remedial reading session with a journal page that had at least six signatures crammed into the tiny box. Curious, the teacher asked, "Why did you have so many people sign your journal?" Barry's indignant reply—"I am trying to become fluent"—clearly demonstrated that he had internalized the ideal of fluency and taken ownership of his own journey toward becoming a more accomplished reader.

The Teachers' Journey Over Time

Stages of Growth

Integrating formative assessment practices into routines to the extent that students begin to monitor and drive their own progress is a significant departure from traditional practice. It took Armstrong teachers time to change. Participating teachers went through a developmental sequence, similar to the progression that we have observed among teachers honing formative assessment in other settings.

First, as teachers became aware of formative assessment characteristics and practices, most teachers recognized that they were already doing some formative actions—such as giving students general feedback—and entered an initial stage that we call consciousness raising. Teachers at this stage said that they already practiced formative assessment but just didn't call it that; they wondered what all the fuss was about. One common misconception at this stage is for teachers to believe they are explaining the learning target to students, when all they are really doing is giving students a number to beat. ("Let's see if you can score at least a 51.") Explaining a learning target means helping students form an idea of what it means to understand a concept or be able to perform a specific skill to a high standard, not just telling students what score would reflect improvement.

Teachers then entered a second stage we call skill building in which they developed and used formative assessment more deliberately to meet the needs of their individual classrooms. They realized that there is more to formative assessment than they had thought.

Finally, after they had used formative assessment strategies customized to their students and content for some time, teachers moved into an intentional stage, in which they realized the power of deliberately sharing information with students and in which they strategically employed formative assessment practices.

Distinguishing the Real Deal

Once they reached this intentional stage, the Armstrong teachers could distinguish between their new formative assessment skills and their previous, less comprehensive formative practices. They saw what they needed to do to keep students' engagement and initiative in learning increasing. At the beginning of their work with formative assessment, for example, many teachers assumed that they were giving "specific"
feedback. As their formative assessment-related groups continued to meet, they recognized that their feedback lacked enough specificity to make it useful to student learning; their words weren't helping each student understand what to do next or do differently so they weren't leading to improvement.

A second difference emerged in the area of classroom record keeping. Teachers discovered that they needed not only to keep more records but also to perform more systematic note taking and record keeping.

Teachers also saw the need to bolster their communication with students. As good teachers, they were already interested in involving students in instruction and assessment. As they deepened their knowledge of formative assessment, they communicated with students more, and they heightened their expectations that students would do something particular with assessment information—not just "study." An elementary reading teacher described how she improved both record keeping and communication:

> After I am finished assessing students, I record informal observation notes. I tell the student what I am writing down, and what it means. For example: "I am writing that you did a good job finger tracking today. I am also writing down that you had a little trouble sounding some words out, out loud. It's really important for you to sound a word out with your voice when you're not sure of it. You will get the word a lot faster that way." After I write the notes on my assessment sheet, I give the student a kid-friendly note with the same contents. The student can then take this note home to show parents.

A final difference, and perhaps the most important, appeared in the language that teachers used to describe their efforts. As teachers developed increasingly sophisticated understandings of formative assessment, intensified their record keeping, focused on improving feedback, and strengthened their emphasis on communication, the language that they used to describe formative assessment shifted from "assessment language" to phrases that referred to formative assessment as an instructional strategy. In doing so, they linked formative assessment with differentiating instruction. As one teacher said,

> I used to view assessment … as evaluating my students' work. … Now I view formative assessment as an ongoing process [in which I] set a specific goal for instruction, teach with that goal in mind, assess whether students have met the goal, and use the results to decide on the next step of the instruction.

### Practices That Spur Ownership

The Armstrong teachers found that the following practices helped them support students' motivation and active investment in their own learning. It's worth noting that these are teacher practices. So here is our paradox: The teacher is in control of how much control the student experiences!

**Clearly communicate to students the learning target**—in your words, in instructional activities, and in assignments. Check to make sure they really understand what that target is. Without an "I know where I'm going" feeling, students passively go wherever a teacher takes them. For example, here's how an elementary teacher shared the learning target of a language arts lesson with students:

> Today we're going to learn how to make predictions about a story before we read it. ... Making predictions is an important part of understanding what we read. You will know you have made a good prediction if you have connected the title, the picture, and the selected vocabulary to make an intelligent guess about the story's main idea.

**Give descriptive feedback that is tied to the learning target.** Describe students' work and the processes they used to do it; make sure they understand the connection. An example of this kind of feedback comes from
an 8th grade technology education class at Armstrong. Students created a balsa-wood bridge using their knowledge of compression and tension. The assignment enabled students to demonstrate their understanding of how forces act on a structure when load is applied—and to analyze what they did to pinpoint areas of weakness according to load distribution. The teacher's feedback to one student not only described what that student had done well but also provided the student with a clear set of next steps to progress toward the learning target:

You made good use of triangles in your structure. ... Here are some ways to analyze what you did to improve your design. Check the areas of weakness and ask yourself if they are well supported. Remember that you must have at least 40 cross members. Also ask yourself if smaller or bigger spaces are stronger and use that information to refine your design. Finally, look for areas of weakness and see how you can add supports. For instance, a center line will help with symmetry.

*Give guidance that helps students realize they can do what they need to do.* Provide clear feedback and achievable steps toward improvement. Help students see the connections between specific strategies that they used and their accomplishments. If those strategies are not helping them meet the learning target, suggest or teach them a strategy that will. Revealing the connection between what students do and what they learn leads them toward self-efficacy.

You can see this strategy come to life in an example from an 11th grade history class. The students' task was to investigate factors leading to the French Revolution and determine whether the people of France had cause to use violence, citing specific reasons to support their conclusion. The teacher's feedback highlighted the connection between what students did and what they learned:

Your use of specific examples showed that you considered many factors on both sides of the issue; this is a critical component of analytical reasoning and decision making. You told specific ways that King Louis XVI ignored the suffering of the people and drove them to violence. You can strengthen your conclusions by providing specific supporting details for each example that you discuss. For instance, what were some specific ways the king made life so "hard" that it drove the people to violence?

*Raise the quality of classroom discourse.* Ask questions that make students think, not regurgitate information; students will not only learn to think, but they will also learn that successful students need to think. Teach students to ask questions and expect them to seek clarity. Only then will they think for themselves and regulate their own learning.

In the following question sequence that we observed in a 2nd grade classroom, the teacher's questions called students' attention to their thinking:

Teacher: Jakub, Martin, and Janeen, how did you add the number?

Martin: We did it a couple ways.

Teacher: Can you explain one of your ideas?

Martin: We put the numbers into a "plus problem," making sure to keep the ones in the ones place and the tens in the tens place and then added them up ... 5 plus 5 is 10, plus 5 is 15, plus 5 is 20 ... put down the zero and carry the 2. We kept going with that way.

Teacher: That way makes good sense. Is there another way that you solved it?
Janeen: We separated the numbers into tens and fives. Then we counted by tens: 10, 20, 30, 40 and then counted by fives: 45, 50, 55, 60.

Teacher: I'll bet a lot of you came up with ideas like these. Let's talk in groups about the methods Jakub, Martin, and Janeen used and how those methods were alike and different.

Although these recommendations sound deceptively simple, it took years of practice for teachers involved in the formative assessment initiative at Armstrong to implement them skillfully and see strong results. The results were worth the effort and demonstrated that skillful formative assessment can help students drive their own learning.

References


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Feedback That Fits

To craft teacher feedback that leads to learning, put yourself in the student's shoes.

Susan M. Brookhart

From the student's point of view, the ideal "script" for formative assessment reads something like, "Here is how close you are to the knowledge or skills you are trying to develop, and here's what you need to do next." The feedback teachers give students is at the heart of that script. But feedback is only effective when it translates into a clear, positive message that students can hear.

Student Understanding and Control

The power of formative assessment lies in its double-barreled approach, addressing both cognitive and motivational factors. Good formative assessment gives students information they need to understand where they are in their learning (the cognitive factor) and develops students' feelings of control over their learning (the motivational factor).

Precisely because students' feelings of self-efficacy are involved, however, even well-intentioned feedback can be very destructive if the student reads the script in an unintended way ("See, I knew I was stupid!"). Research on feedback shows its Jekyll-and-Hyde character. Not all studies of feedback show positive effects; the nature of the communication matters a great deal.

Recently, researchers have tried to tease out what makes some feedback effective, some ineffective, and some downright harmful (Butler & Winne, 1995; Hattie & Timperley, 2007; Kluger & DeNisi, 1996). Other researchers have described the characteristics of effective feedback (Johnston, 2004; Tunstall & Gipps, 1996). From parsing this research and reflecting on my own experience as an educational consultant working with elementary and secondary teachers on assessment issues, particularly the difference between formative assessment and grading, I have identified what makes for powerful feedback—in terms of how teachers deliver it and the content it contains.

Good feedback contains information a student can use. That means, first, that the student has to be able to hear and understand it. A student can't hear something that's beyond his comprehension, nor can a student hear something if she's not listening or if she feels like it's useless to listen. The most useful feedback focuses on the qualities of student work or the
processes or strategies used to do the work. Feedback that draws students’ attention to their self-regulation strategies or their abilities as learners is potent if students hear it in a way that makes them realize they will get results by expending effort and attention.

Following are suggestions for the most effective ways to deliver feedback and the most effective content of feedback. Notice that all these suggestions are based on knowing your students well. There is no magic bullet that will be just right for all students at all times.

**Effective Ways to Deliver Feedback**

**When to Give Feedback**
If a student is studying facts or simple concepts—like basic math—he or she needs immediate information about whether an answer is right or wrong—such as the kind of feedback flash cards give. For learning targets that develop over time, like writing or problem solving, wait until you have observed patterns in student work that provide insights into how they are doing the work, which will help you make suggestions about next steps. A general principle for gauging the timing of feedback is to put yourself in the student's place. When would a student want to hear feedback? When he or she is still thinking about the work, of course. It's also a good idea to give feedback as often as is practical, especially for major assignments.

**How Much Feedback?**
Probably the hardest decision concerns the amount of feedback. A natural inclination is to want to “fix” everything you see. That's the teacher's-eye view, where the target is perfect achievement of all learning goals. Try to see things from the student's-eye view. On which aspects of the learning target has the student done good work? Which aspects of the learning goals need improvement and should be addressed next? Are any assignments coming up that would make it wiser to emphasize one point over another? Consider also students' developmental level.

**What Mode Is Best?**
Some kinds of assignments lend themselves better to written feedback (for example, reviewing written work); some to oral feedback (observing as students do math problems); and some to demonstrations (helping a kindergarten student hold a pencil correctly). Some of the best feedback results from conversations with the student. Peter Johnston’s (2004) book *Choice Words* discusses how to ask questions that help students help you provide feedback. For example, rather than telling the student all the things you notice about his or her work, start by asking, "What are you noticing about this? Does anything surprise you?” or "Why did you decide to do it this way?"

You should also decide whether individual or group feedback is best. Individual feedback tells a student that you value his or her learning, whereas group feedback provides opportunities for wider reteaching. These choices are not mutually exclusive. For example, say many students used bland or vague terms in a writing assignment. You might choose to give the whole class feedback on their word choices, with examples of how to use precise or vivid words, and follow
up with thought-provoking questions for individual students, such as, "What other words could you use instead of big?" or "How could you describe this event so someone else would see how terrible it was for you?"

The Best Content for Feedback
Composing feedback is a skill in itself. The choices you make on what you say to a student will, of course, have a big influence on how the student interprets your feedback. Again, the main principle is considering the student's perspective.

Focus on Work and Process
Effective feedback describes the student's work, comments on the process the student used to do the work, and makes specific suggestions for what to do next. General praise ("Good job!") or personal comments don't help. The student might be pleased you approve, but not sure what was good about the work, and so unable to replicate its quality. Process-focused comments, on the other hand, give suggestions that move the work closer to the target, such as, "Can you rewrite that sentence so it goes better with the one before it?"

Relate Feedback to the Goal
For feedback to drive the formative assessment cycle, it needs to describe where the student is in relation to the learning goal. In so doing, it helps each student decide what his or her next goal should be. Feedback that helps a student see his or her own progress gives you a chance to point out the processes or methods that successful students use. ("I see you checked your work this time. Your computations were all correct, too! See how well that works?") Self-referenced feedback about the work itself ("Did you notice you have all the names capitalized this time?") is helpful for struggling students, who need to understand that they can make progress as much as they need to understand how far they are from the ultimate goal.

Try for Description, Not Judgment
Certain students are less likely to pay attention to descriptive feedback if it is accompanied by a formal judgment, like a grade or an evaluative comment. Some students will even hear judgment where you intend description. Unsuccessful learners have sometimes been so frustrated by their school experiences that they might see every attempt to help them as just another declaration that they are "stupid." For these learners, point out improvements over their previous performance, even if those improvements don't amount to overall success on the assignment. Then select one or two small, doable next steps. After the next round of work, give the student feedback on his or her success with those steps, and so on.

Be Positive and Specific
Being positive doesn't mean being artificially happy or saying work is good when it isn't. It means describing how the strengths in a student's work match the criteria for good work and how they show what that student is learning. And it means choosing words that communicate respect for the student and the work. Your tone should indicate that you are making helpful suggestions and giving the student a chance to take the initiative. ("This paper needs more
detail. You could add more explanation about the benefits of recycling, or you could add more
description of what should be done in your neighborhood. Which suggestion do you plan to try
first?) If feedback comes across as a lecture or suggestions come across as orders, students
will not understand that they are in charge of their own learning.

Feedback should be specific enough that the student knows what to do next, but not so specific
that you do the work. Identifying errors or types of errors is a good idea, but correcting every
error doesn't leave the student anything to do.

These feedback principles apply to both simple and complex assignments, and to all subjects
and grade levels. The following example of ineffective and, especially, effective feedback on a
writing assignment reflects these principles in practice.

A Tale of Two Feedback Choices
As part of a unit on how to write effective paragraphs, a 4th grade teacher assigned her
students to write a paragraph answering the question, "Do dogs or cats make better pets?"
They were asked to have a clear topic sentence, a clear concluding sentence, and at least three
supporting details. Figure 1 shows what a student named Anna wrote and what ineffective
teacher feedback on Anna's paragraph might look like.

Figure 1. Ineffective Feedback on Anna's Writing Assignment

This is why I like dogs better than cats. I think dogs are really playful. They can also be strong to pull you or
something. They can come in different sizes like a
Great Dane or a Weiner dog. They can also be in different
colors. Some are just mutts, others are pedigree. Best of
all, dogs are cute and cuddly. That's why I like dogs a lot better than cats.

To provide feedback, this teacher decided to make written comments on each student's paper
and return the papers to students the day after they turned them in. So far, so good. However,
the feedback in Figure 1 is all about the mechanics of writing. This doesn't match the learning
target for this assignment, which was to structure a paragraph to make a point and to have
that point contained in a topic sentence. Because the mechanical corrections are the only
comments, the message seems to be that Anna's next step is to fix those errors. However, this
teacher has already fixed the errors for her. All Anna has to do is recopy this paragraph.
Moreover, there is no guarantee she would understand why some words and punctuation
marks were changed. Recopying by rote could result in a "perfect" paragraph with no learning
involved!
The worst part about this feedback, however, is that it doesn't communicate to Anna that she did, in fact, demonstrate the main paragraphing skills that were the learning target. Anna successfully fashioned a topic sentence and a concluding sentence and provided supporting details. She needs to understand that she has accomplished this. Once she knows that, suggestions about how to make her good work even better make sense.

Figure 2 lists *effective* comments a teacher might write on Anna's paper or, preferably (because there is more to say than a teacher might want to write or a 4th grader might want to read), discuss with her in a brief conference. A teacher would probably use a few—but not all—of these comments, depending on circumstances.

**Figure 2. Examples of Effective Feedback on Anna's Writing Assignment**

<table>
<thead>
<tr>
<th>Possible Teacher Comments</th>
<th>What's Best About This Feedback</th>
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</thead>
<tbody>
<tr>
<td><strong>Your topic sentence and concluding sentence are clear and go together well.</strong></td>
<td>These comments describe achievement in terms of the criteria for the assignment. They show the student that you noticed these specific features and connected them to the criteria for good work.</td>
</tr>
<tr>
<td><strong>You used a lot of details. I count seven different things you like about dogs.</strong></td>
<td>This comment would be especially useful for a student who had not previously been successful with the writing process. The comment identifies the strategy the student has used for writing and affirms that it was a good one. Note that &quot;the writing often sounds genuine&quot; might be better English, but &quot;real&quot; is probably clearer for this 4th grader.</td>
</tr>
<tr>
<td><strong>Your paragraph makes me wonder if you have a dog who is playful, strong, cute, and cuddly. Did you think about your own dog to write your paragraph? When you write about things you know, the writing often sounds real like this.</strong></td>
<td></td>
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<tr>
<th>Your reasons are all about dogs. Readers would already have to know what cats are like. They wouldn't know from your paragraph whether cats are playful, for instance. When you compare two things, write about both of the things you are comparing.</th>
<th>This constructive feedback criticizes a specific feature of the work, explains the reason for the criticism, and suggests what to do about it.</th>
</tr>
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<tbody>
<tr>
<td>Did you check your spelling? See if you can find two misspelled words.</td>
<td>These comments about style and mechanics do not directly reflect the learning target, which was about paragraphing. However, they concern important writing skills. Their appropriateness would depend on how strongly spelling, style/usage, and word choice figure into the longer-term learning targets.</td>
</tr>
<tr>
<td>Feedback about making the topic sentence a stronger lead might best be done as a demonstration. In conference, show the student the topic sentence with and without &quot;This is why&quot; and ask which sentence she thinks reads more smoothly and why. Ask whether &quot;This is why&quot; adds anything that the sentence needs. You might point out that these words read better in the concluding sentence.</td>
<td>Notice that these comments first compare the student's work with the criteria for the assignment, which were aligned with the learning goal. They acknowledge that Anna's paragraph shows that she understands how to produce a topic sentence, supporting details, and a concluding sentence.</td>
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</table>

The rest of the feedback choices depends on the context. How much time is available to discuss this paper? Which other feedback comments would align with learning targets that have previously been emphasized in class? Which of the possible next steps would be most beneficial for this particular student, given her previous writing? For example, if Anna is a successful writer who likes writing, she probably already knows that describing traits she has observed in her own dog was a good strategy. If she has previously been an unsuccessful writer but has produced a paragraph better than her usual work—because the assignment finally asked a question about which she has something to say—it would be worth communicating to her that you noticed and naming "write about what you know" as a good strategy for future writing.

**Feedback Practice Makes Perfect**
Feedback choices present themselves continually in teaching. You have opportunities to give feedback as you observe students do their work in class and again as you look at the finished work. Take as many opportunities as you can to give students positive messages about how they are doing relative to the learning targets and what might be useful to do next. Make as many opportunities as you can to talk with your students about their work. As you do, you will develop a repertoire of feedback strategies that work for your subject area and students. The main thing to keep in mind when using any strategy is how students will hear, feel, and understand the feedback.

References


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