Formative Assessment

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

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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

That Empowers

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

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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.

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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 class-room. 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 chal-lenged reader, Barry, arrived at his reme-dial 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 indig-nant 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 prac-tices into routines to the extent that students begin to monitor and drive their own progress is a significant depar-ture 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 devel-oped and used formative assessment more deliberately to meet the needs of their individual classrooms. They real-ized 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*

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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 initia-tive in learning increasing. At the begin-ning 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.

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

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. **EL**

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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

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.

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