

What if we approached testing this way?

By Valerie Strauss Updated: May 1 at 1:30 pm

Arthur H. Camins writes about the unintended consequences of many education reform policies. Camins is the director of the Center for Innovation in Engineering and Science Education at the Stevens Institute of Technology in Hoboken, N.J. The ideas expressed in this article are his alone and do not represent Stevens Institute. His other writing can be found at www.arthurcamins.com. A version of this article was originally published February 2010, in the Gheens Institute for Innovation, Institute Insights.

By Arthur H. Camins

[Frequent high-stakes testing](#) and its misuse for teacher evaluation are poisoning the assessment waters. Assessment should not be the goal of learning. The word “assessment” should not make students, teachers, administrators and parents cringe. It does not have to be this way. For students and their teachers the most effective use of assessment is to guide next steps for learning.

What if we shifted the balance of our assessment attention from the summative to the formative—assessment that can be used every day to support learning?

What if we could more precisely identify where each student was along the pathway to learning?

What if we could be more accurate at sorting out the nuances in his or her gaps in understanding?

What if we focused most of our assessment attention on becoming better at interpreting daily data from regular class work and used that evidence to help students move their own learning forward?

I think we would become better at seeing the whole student and responding to his or her individual needs. Assessment would be a support instead of a threat. In the end, students would perform better on the summative tests.

Clear [standards](#) are important, but they are broad system goals rather than individually prescribed learning targets. In order to advance each student’s learning, we need to find just the right level of demand that is challenging enough to keep learning moving forward without causing students to shut down. That requires detailed, periodic—if not daily—check-ins on the intricacies of student understanding

and progress. These check-ins can then be used to make finely tuned instructional adjustments. I am not arguing for inserting more frequent assessments in order to predict student achievement on summative tests. Doing so would just add a scoring burden on busy teachers without producing a student learning benefit. I am not talking about inserting additional assessment items into the already too full instructional load. Rather, I want to make the case for teachers and students learning from the work they are already doing.

Invest in Formative Assessment

To accomplish this, we need to invest resources and time in formative assessment.

Although teaching students is very different from treating patients, we can learn much from the practices of medical professionals. For example, cardiologists often prescribe blood thinners to reduce the likelihood of clots following surgery, making their best judgments about the correct dosage. They need to get it just right to avoid life-threatening clots or hemorrhaging. However, they then perform regular prothrombin timing tests to monitor the patient and make dosage and frequency adjustments.

Although the doctors may have a commanding knowledge of the administration of the drug, they know each patient responds differently. They know the general trajectory of recovery from research and experience, but not the intricacies or variation in the paths that each patient will follow. We need to think about teaching in the same way. The personal variables are no less complex, and the educational treatments are often similarly multifaceted.

Educational research and classroom knowledge are beginning to reveal typical, topic-specific learning trajectories, which have come to be known as learning progressions. Effective teachers have deep knowledge of these learning progressions, as well as knowledge of how an individual student may vary from what is typical.

Because this knowledge is highly contextualized, the best measures of student learning are embedded in regular class work so that assessment activities are “essentially indistinguishable from instructional activities, but can generate immediate feedback to teachers and students about performance, as well as reports for teachers, students, and parents detailing progress relative to expectations.” (Kennedy, Wilson, 2007)

Formative assessment means precise diagnosis that leads to the next steps that move each student’s learning forward. The first step is to identify clear learning targets. Framing learning targets as questions makes learning more active so students are attempting to solve a problem rather than learning an adult-driven goal. However, before designing instruction, effective teachers—like doctors—tune into individual students and anticipate their potential confusions, partial understandings, and misconceptions students might.

After making well-informed plans, effective teachers check in on how students are doing. This includes examining where their students are at the moment and where the students are along the anticipated path to understanding. The precision of the check-in is critical, but so is the next step adjustment. The doctor does not just do the clotting

test but also makes a personal observation of the patient and then adjusts the medication in relation to other tests. Teaching is no different. Subsequent instructional steps should be based on interpretation of data and experienced clinical judgment. Experienced teachers develop and select from a repertoire of finely tuned next-steps strategies.

Consult and Collaborate

Continuing the medical analogy, modern medicine does not rely on the perspective of one doctor. Neither should instruction. Several years ago, my wife had occasion to land in the emergency room after preparation for a routine procedure suddenly made her feel very ill. At intake, she mentioned some pain in her chest. She then experienced—or from her perspective, endured—several hours of tests from a variety of specialists, which included answering the same diagnostic questions from multiple people, the answers to which had already been recorded in her chart. However, this was not accidental or due to a lack of communication.

Strong evidence depends on interpretation of reliable data! The doctors were verifying by being thorough and by not relying on one test or one diagnostician. My point is that diagnosis of students' understanding and progress and teachers' judgments regarding instructional adjustments should not be done in isolation or without multiple sources of information. Colleagues bring valuable multiple perspectives.

Patients do not just rely on medication or a doctor's diagnosis but provide feedback to the doctor and assist in their own treatment. The same is true with students. They must participate in their own assessment and assume responsibility for their own learning. However, unlike physicians, teachers do not interact with students one at a time in a private treatment room. The social basis and goals of learning, not to mention funding, demand that we teach groups of students in classrooms.

Learning is profoundly social and individual. Lessons are complex orchestrations, and it is impossible to get continuous data on every student. Formative assessment is not akin to trying to watch all of the heart rhythm, blood pressure, and temperature monitors in an entire postoperative recovery room at the same time. Practicality suggests that we need to strategically select rich opportunities to check in on students.

These opportunities should be designed to provide broad access to learning and to reveal a range of student thinking. A stress test is designed to diagnose cardiac and pulmonary function across a range of conditions for a range of patients. In a sense, the test has multiple entry and exit points that can be individually adjusted as needed. Most importantly, the test is structured in order to push limits and responses. Doctors have knowledge of the meaning of responses at different points. They may follow up with further testing. In the same way, effective classroom assessment is designed to push students' limits, revealing their understanding across a range of challenge levels.

Listen to Students

Good doctors, after deciding on a course of treatment, ask their patients how they feel. When I had rotator cuff surgery, the subsequent treatment had interacting components. My progress was based on various manipulations that the physical

therapist performed on my shoulder and the exercises that were my responsibility to do at home. I was asked how I felt and whether and how I did my exercises. We each made adjustments based on feedback from one another.

Effective instruction has the same dynamic. The therapist had knowledge of how I should progress from years of experience, but I knew how I felt. The truth is that sometimes the exercises hurt. I kept going because I believed that the hard work would pay off. Sometimes, we forget to ask students about their own progress, or we forget that they may not have the confidence to know that hard work will pay off. However, unlike the therapist's pulling, massaging, and twisting of my shoulder, which had a healing effect, adults cannot make students understand through instruction and curricula.

Only students can construct understanding. Patients who are better attuned to their own bodies give better feedback so that doctors can make more precise treatment plans. We need to design instruction, assessment, and classroom culture so that students become more attuned to their own learning. This metacognition requires time and practice and for students to be clear about where their learning is headed, where they are along the way, as well as targeted feedback about how to move forward.

Don't Judge, Inform

Less focus on summative assessment of learning and more focus on daily, embedded formative assessment will help us reclaim the central role of teachers and the art of teaching that I think has been de-emphasized by the focus on summative testing, Adequate Yearly Progress and value-added metrics for teacher evaluation. Research that compares the relative effects on posttest student performance from grades, grades with comments, and comments alone suggests that summative judgments, even when accompanied by comments intended to help, are far less effective than helpful guiding comments alone in motivating students and increasing their learning (Butler, 1987). It may be that summative and formative assessments have that same relationship on effective teaching. A focus on formative assessment and its key component—feedback to students—will shift our perspective on diagnostic data from a source of judgment to a source of information for improvement.

Of course, not every educational goal is easily measured. Subject matter knowledge and skills are certainly important, but so are imagination, creativity, flexibility, respect and social responsibility. I am not arguing for turning classrooms into a diagnostic laboratory. Classrooms should be places of joy, friendship and discovery. However, I do believe that we can learn to be more productively tuned into the nuances of students learning. We can learn to more effectively provide feedback to students so that they can move their own learning forward.

I have tried to articulate what I consider challenging aspirational goals. Achieving all of them will be a long-term effort, demanding shared learning and responsibility among teachers, principals, school systems, curriculum developers, psychometricians, and policy makers at all levels. Most importantly, it will require time for teachers to collaborate to share ideas and practice. However, I believe that this balanced view, with an emphasis on classroom assessment, gives us direction and points us toward small steps we all can begin to take on the journey.

© The Washington Post Company