COMPREHENSIVE STANDARDS-BASED ASSESSMENT SYSTEMS SUPPORTING LEARNING

BY JOAN HERMAN

INTRODUCTION

Against backdrops of the continuing belief in the power of assessment to improve schools and a concurrent backlash against too much testing, the Every Student Succeeds Act (ESSA, 2015) invites states, in collaboration with diverse stakeholders, to rethink their assessment systems to serve their stakeholders' information needs and better support student learning. Indeed, schools are awash in all variety of assessment: formative assessment, summative assessment, classroom assessment, curriculum-embedded assessment, performance assessment, interim and benchmark assessments, district and state tests—each presumably intended to serve an important purpose(s), but collectively too often offering a babel of confusing terminology and a jumble of data. States will need to engage stakeholders at all levels—students, parents, educators, school and district leaders, policymakers, the public— to move toward more usable and effective systems. But how will states engage stakeholders in designing or implementing more usable systems if all stakeholders do not have a common language and a common understanding of how assessment is supposed to work?

This brief is intended to provide a common foundation by laying out a general framework for a comprehensive, learning-based assessment system. The framework incorporates different types of assessment to serve the distinct information needs of different stakeholders, but all of the assessments are closely coordinated. This coordination ensures uniform focus and strategic action across levels to fuel students' achievement of state college and career ready standards (CCRS).

The brief starts with consideration of the role of assessment in improving learning and then examines the various types and levels of assessment that constitute a coherent, balanced, learning-based system of assessment. The system enables stakeholders at every level to utilize a common cycle of assessment-driven, continuous improvement, with each cycle focused on different levels of evidence and action. The brief closes with consideration of essential pre-requisites to achieving the framework vision, including high quality assessment tools, effective use of assessment to improve learning, and system supports for both.

## THE ROLE OF ASSESSMENT IN STANDARDS BASED REFORM

Assessment serves not only as a measure of student progress and success in achieving state standards, but as a critical lever and process for supporting that success. As a lever, assessment serves to communicate what is important for students to know and be able to do and to motivate educators and students alike to focus teaching and learning accordingly. As teachers and as students, how many of us have been asked—or have asked—"What's going to be on the test?" so that we could focus accordingly. Ample research well demonstrates WYGIWYA—what you get is what you assess (Hamilton, Stecher, & Yuan, 2008; Herman, 2010)—making it very important that our assessment(s) at every level matches the richness and depth of our goals for student learning.

Beyond signaling what is important or valued learning, assessment also provides evidence for action and a process for engaging in continuous improvement. Stakeholders at all levels of the education system—students, teachers, school and district leaders, policymakers—are expected to engage in virtually the same process of assessment to support student success. As displayed in Figure 1, the general steps of the process are:

- Establish standards/learning *goals*, including agreeing on achievement levels or *criteria* that will indicate student success on the standards/learning goals
- Collect *evidence of student learning* and administer assessments

- *Analyze results*
- Take *action to improve* and fill in the gaps

Figure 1: Cycle of Assessment
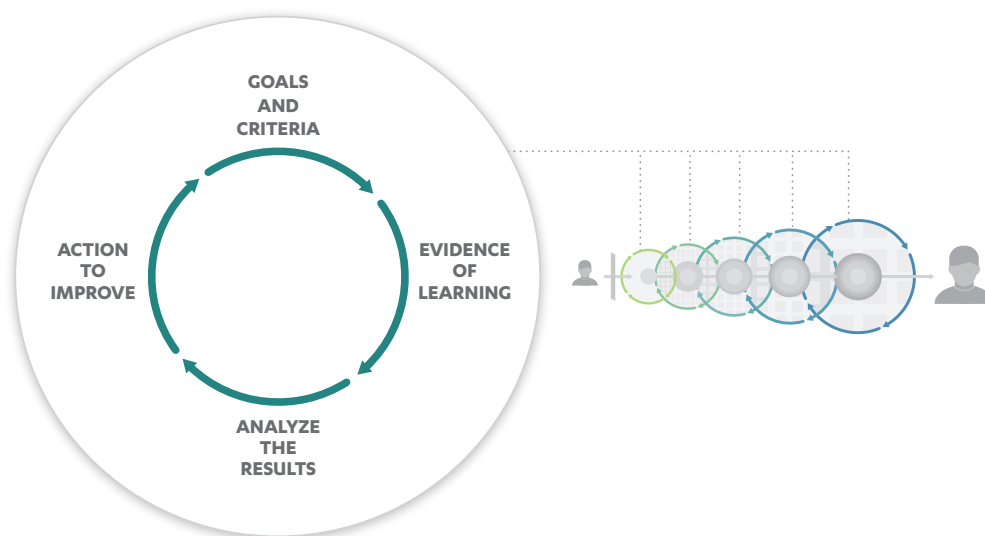
As described in the sections below, this same cycle of assessment operates on assessment data of progressively larger grain size as one moves from teachers' classroom formative and summative assessment practices, to school and district assessments, and end-of-year accountability tests. The primary audiences for the data also change with the level and type of assessment. For example, the formative assessment cycle for teachers and students unfolds on a minute-by-minute basis during the process of instruction toward lesson goals, while state policy makers may be involved in an annual cycle of assessment review and action based on state assessment results.

A LEARNING-BASED ASSESSMENT SYSTEM

The system is learning-based because it starts with, and builds on, the learning pathways students must traverse to achieve success. Imagine you are a third grade teacher with responsibility for taking your students from where they are when they enter your classroom to success on grade level standards at the end of the year. You start with students' current status relative to standards and lay out the progression of standards and specific learning goals students will need to master to get to success at the end of the year, a progression ideally developed collaboratively with your school and/or district.

We can consider how assessment supports students' successful journey along this progression either top down or bottom up. That is, we can backward chain from end-of-year standards and large scale assessments to daily learning goals, or we can consider how the process unfolds bottom up, starting with the core of immediate classroom instruction and assessment and seeing how it builds to end-of-year success. In this brief, we start from the latter perspective, because that is where the learning actually occurs (see Figure 2).

Figure 2: Pathway to Student Success
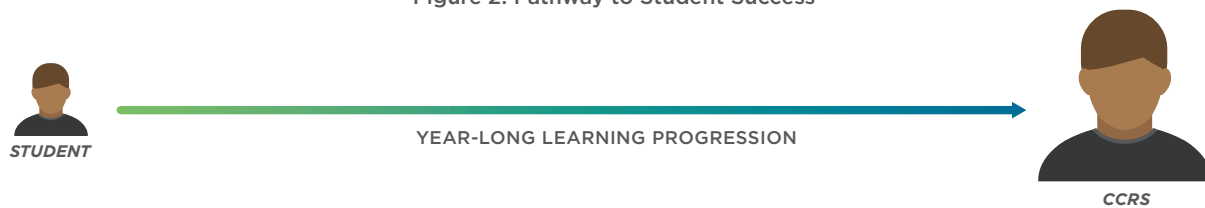
Diagnostic/placement and formative assessment. So starting with the here and now of classroom practice, teachers use expected learning progressions to establish lesson learning goals and success criteria, aided perhaps by *diagnostic* assessment of students' existing knowledge and skills and/or *placement tests* to determine students' eligibility for special programs. These diagnostic/screening assessments, in fact, may be given at any time of the year, when a teacher or others need more detailed information about students' strengths and weaknesses to inform subsequent instruction and for special program placement.

On a routine basis, *formative assessment* provides teachers and students the immediate and continuous evidence they need to fuel students' ongoing progress. As defined by the Council of Chief State School Officers (CCSSO, 2008):

> *Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes.*

Formative assessment's focus on continuous assessment and immediate action to support teaching and learning stands in contrast to teachers' summative assessment, as described further below, which is aimed at evaluating student success or mastery at the end of a learning sequence or at the end of course or year.

In formative assessment, teachers engage students in a sequence of instructional activities that are designed to enable students to achieve the learning goals. Students' responses during these activities become opportunities to collect ongoing, *in process evidence* of and to respond to student learning. Teachers listen, watch, observe, and analyze student responses and work throughout each lesson to see how students are doing. They probe, query, scaffold, and ask for student and peer feedback to understand where students are, see what gaps may exist, and to push students along the way to success.


Figure 3
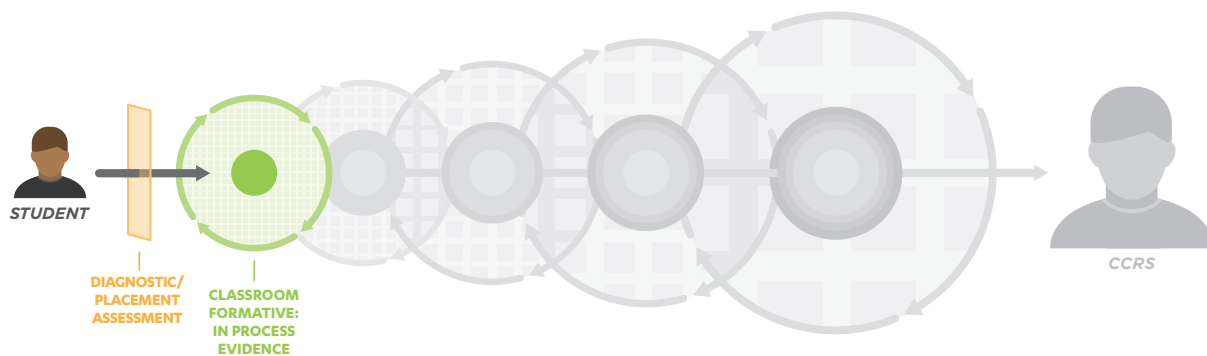
The same minute-by-minute process that facilitates the accomplishment of daily learning goals coalesces in larger grain size (weekly or so) goals that perhaps are addressed by more formal *formative assessments—formal checks* for understanding, such as quizzes, students' completed in-class or homework assignments, presentations and the like.

Analysis of student progress on these assessments enable teachers and students to look back at what students have learned and to feed forward, building on students' strengths and filling in any gaps in knowledge and skill students may have. While the focus here is still formative, student performance on these assessments may sometimes start to figure into student grades, a decidedly summative purpose. Primary users of assessment at this stage are still teachers and students—and perhaps parents who are monitoring their children's progress.

Figure 4
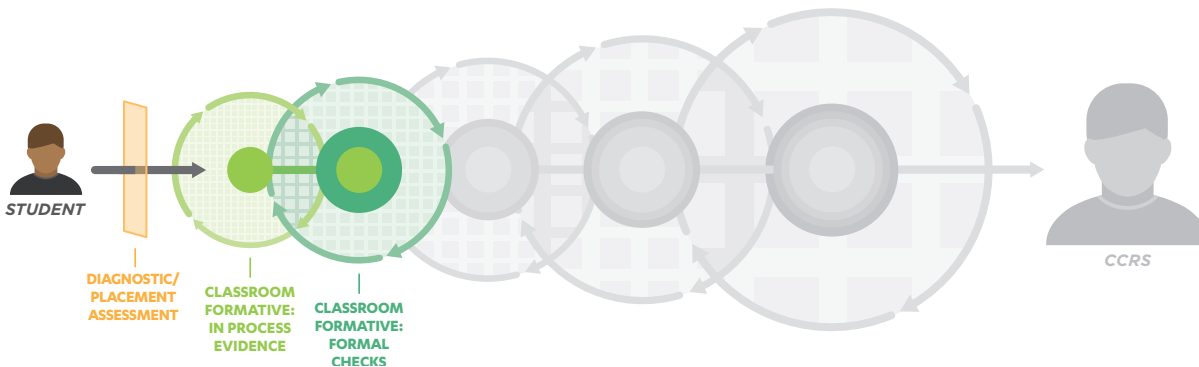
Classroom summative assessments. These weekly goals coalesce into intermediate term, larger grain size classroom goals (for example, unit goals) and students' attainment of these goals. These *classroom summative* assessments need not be limited to what we typically think of as tests—multiple choice, true-false, short constructed response or essay items—but could be composed of rich, culminating performances or assignments that are aligned with college and career ready expectations. Such assessments could ask students to apply and communicate their knowledge and use it to solve problems in a variety of media. At this point on the progression, student assessment results are used for grading and summative functions, even as teachers (and students) can use the results to provide feedback and identify gaps that need to be filled as instruction, teaching, and learning move forward. Prime users at this stage continue to be students and teachers, but principals and grade-level teachers may be coming together around common assignments or assessments to analyze results, chart progress, and take action. Parents, too, can use these results to monitor and support their children's progress.

Figure 5
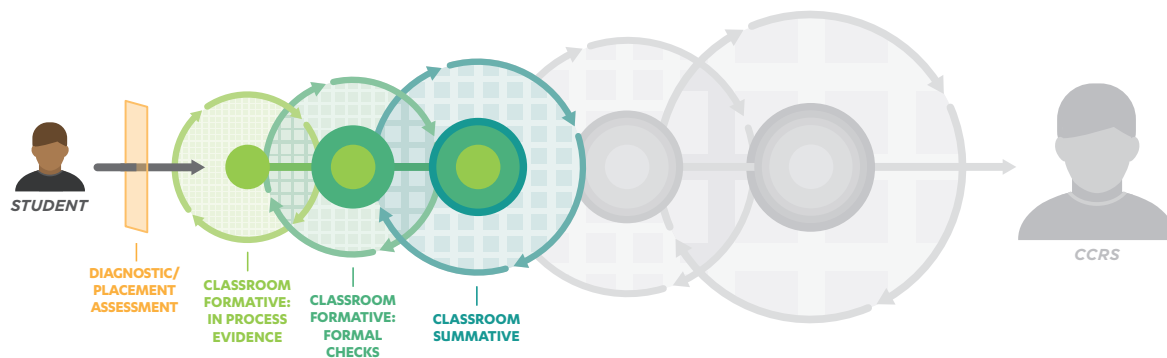
Interim assessments. The process recycles through formative and summative classroom assessments progressively toward the achievement of quarterly and semester goals. At this point, students' accumulated knowledge and skills may be judged by *interim* (or benchmark) tests or by final course exams.

Interim assessments are common assessments mandated by school or district authorities outside the classroom. They are administered periodically—often quarterly—over the course of the school year to provide educators and other stakeholders with information on how students are performing relative to short- and longer-term learning goals and to predict whether students are likely to test proficient on the end-of-year state tests. Interim results can be aggregated, not only to provide teachers with information about individual students and their own classrooms, but to enable school and district stakeholders to examine the relative performance of classrooms within schools, schools within districts, and in some cases relative to other districts.

When closely aligned with curriculum and expected learning progressions, interim assessments can provide educators with one important source of data on what and how well students are learning, how well curriculum and instruction or other programs are working, what learning obstacles may lie in the way, who needs additional help, and who may have promising practices to share—data that can drive immediate action to improve subsequent teaching and learning. Although the data may be useful to teachers, students, and parents, the primary users and uses of interim testing often are outside individual classrooms, where they can support school and district data-based decision-making. For example, they can be used to identify and take action for students and/or teachers who are struggling, to identify and learn from teachers and schools who are doing exceptionally well, as well as to reinforce the importance of the knowledge and skills addressed by the tests.
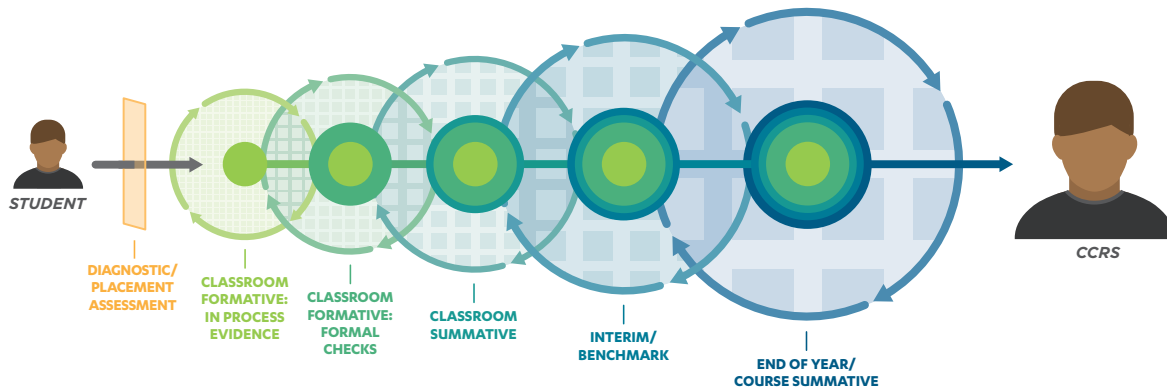

Figure 6
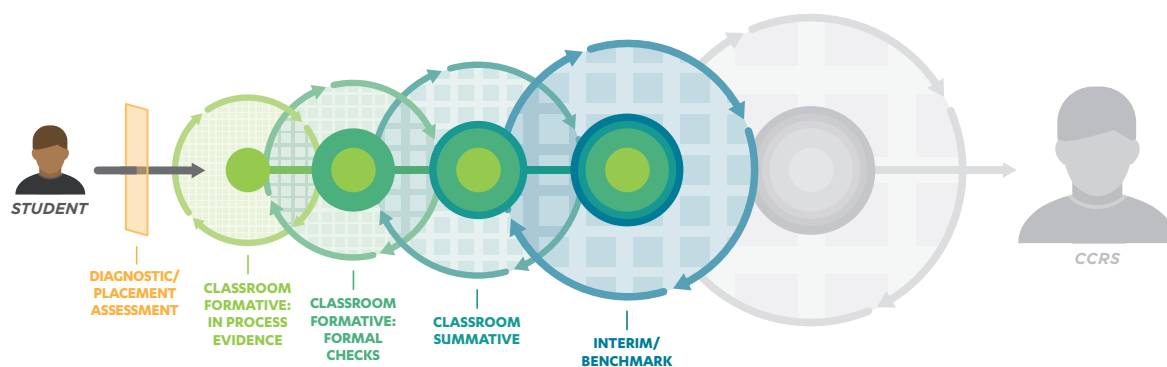
End-of-year/end-of-course assessments. And so, the cycles of instruction, assessment, and improvement continue, with the immediate goals of formative assessment coalescing into the longer-term goals addressed by classroom summative and interim assessments. Over the course of the year, these additively encompass the full set of state standards, which are the targets of *end-of-year* or *end-of-course* assessments. These end-of-year summative assessments provide a broad view of how well students have accomplished the major grade level or course expectations and provide a general thumbs up/thumbs down on student proficiency relative to grade-level college and career standards. Understanding the depth and breadth of individual students' proficiency, however, requires a broader array of information, for example, students' end of year assessment results combined with their performance in classroom work, particularly with rich projects or assignments that require students' complex thinking and problem solving. Any high stakes decision-making about students, teachers, schools and/or programs, in fact, require multiple sources of data (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 2014).

End-of-year assessment results in isolation respond largely to the information needs of stakeholders beyond the classroom door, such as school and district leaders, policymakers, and the public. But even though gross, data from

these end-of-year tests can provide feedback on strong and weak points in school curriculum; in comparing relative effectiveness of programs or interventions; and providing a general sense of how students and schools are doing for parents, the public, school and district leaders, state policymakers, and the media. However, these results are stronger on signaling what students should know and be able to do and on motivating dialog and improvement planning than they are on providing detailed data to inform improvement. Supplemented by data and insights from teachers' formative and summative assessments and students' and parents' insights, the end of year testing, however, can provide a compelling context for improvement planning.

Figure 7

STUDENT

DIAGNOSTIC/
PLACEMENT
ASSESSMENT

CLASSROOM
FORMATIVE:
IN PROCESS
EVIDENCE

CLASSROOM
FORMATIVE:
FORMAL
CHECKS

CLASSROOM
SUMMATIVE

INTERIM/
BENCHMARK

END OF YEAR/
COURSE SUMMATIVE

CCRS

A comprehensive, standards-based system. And so on and so on—the process continues over the course of years, as assessment and instruction support students being on track with deeper learning and being college and career ready (see Figure 8 and Table 1). The system features a relentless focus on state standards and using different types of assessments, all coherent with the same learning goal but each serving different purposes: to propel students toward college and career readiness. The different assessments capture different size steps along a standards-based learning progression and provide different grain size results to support their use, from the very detailed evidence that teachers and students need for on-going instruction, to the gross indicators stakeholders outside the classroom need to support accountability and improvement.

To repeat, formative assessment happens in the classroom, embedded in on-going curriculum and instruction, and is at the core of students' success on all subsequent measures. It provides the small-grained detail on student learning that can power personalized and effective teaching and learning. Even so, assessment at each subsequent point of the system can provide teachers, students, and other stakeholders with important feedback that should feed forward as a basis for subsequent improvement.
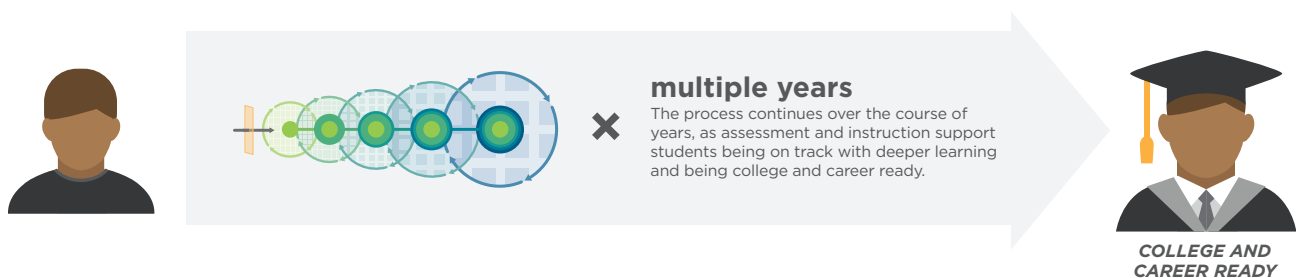
Figure 8

multiple years
The process continues over the course of years, as assessment and instruction support students being on track with deeper learning and being college and career ready.

COLLEGE AND
CAREER READY

Table 1: Assessment Type, Grain Size, Timing, Uses, and Users

ASSESSMENT TYPE	GRAIN SIZE	TIMING	USES	USERS
Diagnostic/Placement	Small	As needed	• Diagnose strengths and weakness in students' existing knowledge and skills • Eligibility and placement for special programs	• Students • Teachers • Parents • Specialists • School Leaders
Classroom formative: In process evidence	Small	• Minute-by-minute • Day-to-day	• Collect on-going evidence of students' progress to inform immediate instruction • Feedback to students to move them toward achieving lesson learning goals	• Students • Teachers
Classroom formative: formal checkpoints	Small	• As needed • Weekly	• Evaluate what students have learned • Information on students' strengths and where to fill gaps in knowledge and skills • Inform parents of student progress	• Students • Teachers • Parents
Classroom summative	Medium	• Unit	• Chart student progress on classroom and unit goals • Identify gaps in student learning • Grading • Grade level or school level progress checks • Inform parents of student progress	• Students • Teachers • Parents • School Leaders
Interim/Benchmark	Medium	• Quarterly • Semester	• Monitor student status and progress on intermediate and/or long-term learning goals • Predict whether students are likely to test proficient on end-of-year state tests • Evaluate relative performance of classrooms, schools, programs • Support school and district data-based decision making	• Students • Teachers • Parents • School/District Leaders
End-of-year summative assessments	Large		• Broad view of students' achievement on major grade level or course expectations • General view on student proficiency relative to grade-level college and career ready standards • Evaluate school curricula, program effectiveness; inform improvement planning	• Students • Teachers • Parents • School/District Leaders • State

BRINGING THE VISION TO REALITY

In summary, assessment can be a powerful tool serving stakeholders at all levels of the educational system in their efforts to improve student learning. To achieve this vision, however, there must be capacity and commitment to well use assessment at all levels. Capacity demands knowledgeable stakeholders who understand and can appropriately use assessment to support their decision-making needs – whether those of a teacher or student acting to detect and fill an immediate learning gap, or those of school or district leaders, or others using assessment to take program-level action.

Capacity to use assessment to improve schooling also demands sound assessment tools: assessments that provide both valid information about where students are in their learning and what they have achieved and comprehensible, usable reports that support intended decision making. Commitment, personal accountability, and a supportive school culture are a final set of ingredients for success.

Schools, districts, and states must attend to all these dimensions to mount successful assessment systems. Do stakeholders have the knowledge and skills they need to use assessment well? Does the system embody the quality tools stakeholders need to accurately assess student learning for sound decision-making? Does the school culture support personal accountability, trust, collective action, and a learning organization?

Understanding how assessment is intended to work and what needs to be accomplished to get there are critical first steps in bringing the vision to fruition: a comprehensive, standards-based assessment system that truly supports student learning.

REFERENCES

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (2014). *Standards for educational and psychological testing.* Washington, DC: American Educational Research Association.

Council of Chief State School Officers. (2008). *Attributes of effective formative assessment.* Washington, DC: CCSSO. Available at http://www.ccsso.org/Documents/2008/Attributes_of_Effective_2008.pdf

Every Student Succeeds Act of 2015, Pub. L. No. 114-95, § 129, Stat. 1802 (2015). Available at https://www.congress.gov/bill/114th-congress/senate-bill/1177/text

Hamilton, L., Stecher, B. & Yuan, K. (2008). *Standards-based reform in the United States: History, research and future directions.* Washington, DC: RAND. Available at http://www.rand.org/pubs/reprints/RP1384.html

Heritage, M., & Herman, J. L. (2014). *Colorado comprehensive assessment framework.* Los Angeles, CA: University of California, National Center for Research on Evaluation, Standards, and Student Testing (CRESST). Retrieved from http://www.csai-online.org/sites/default/files/COFramework_9.25.15.pdf

Herman, J. L. (2010). Educational measurement: Standards-based assessment. In E. L. Baker, B. McGaw, & P. Peterson (Eds.), *International Encyclopedia of Education* (pp. 69-74). Oxford: Elsevier Limited.