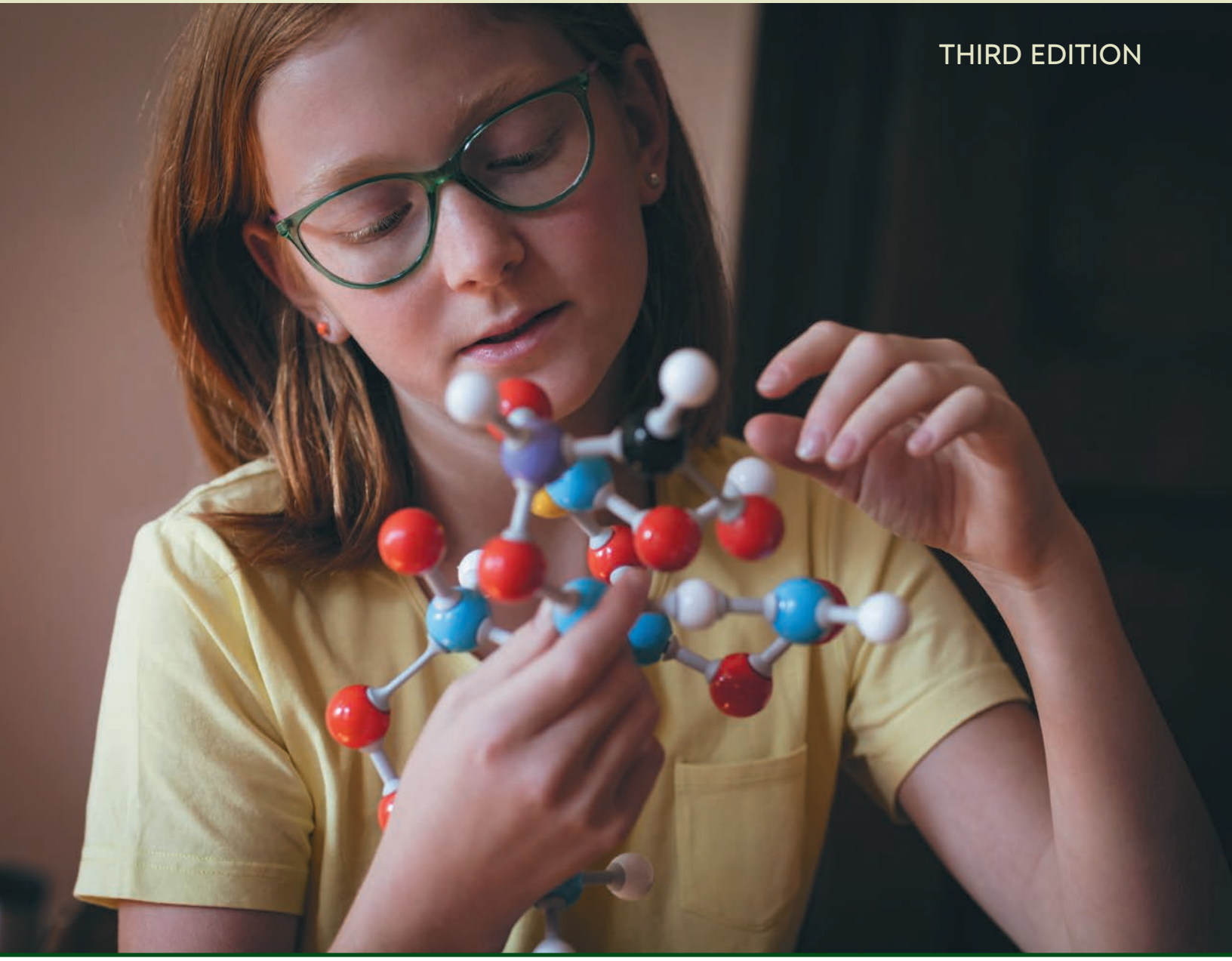
CLASSROOM ASSESSMENT FOR STUDENT LEARNING

DOING IT RIGHT — USING IT WELL



Jan Chappuis | Rick Stiggins

Third Edition

Classroom Assessment *for* Student Learning

DOING IT RIGHT - USING IT WELL

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Finally, over the years, we have worked with many thousands of teachers nationally and internationally. We have benefited as you have shaped the concepts to fit your own classrooms and shared your applications with us. We have learned much about improving assessment practices from you, and for this we thank you all.

Jan Chappuis
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June 2018

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Introduction to the Third Edition

Assessment has received increasingly more focused attention since the second edition of *Classroom Assessment* for *Student Learning* went to press in 2012, bringing with it more opportunities for growth as well as more problems due to the lack of understanding of principles of classroom assessment quality. The third edition of this book remains deeply rooted in the same principles that underpin the first two editions. The changes we have made are in response to what we see as current and future information needs within the K–12 education system.

1. First among the changes, we have revised the five keys to quality classroom assessment to place greater emphasis on formative use of classroom assessment results.
2. Second, we have added content and examples on the following topics:
   - Student goal orientations with an emphasis on helping students adopt a learning orientation to their work
   - Diagnostic assessment and instructional traction
   - Effective feedback practices
   - Student self-assessment and goal setting
   - Patterns of reasoning (critical thinking skills)
   - Making content standards clear to students
   - The steps to take to plan and develop a high-quality assessment
   - Formative assessment practices useful with selected response and written response assessment information
   - Creating a performance task and rubric
   - Formative assessment practices useful with performance assessment information
   - Questioning strategies that engage all students
   - Characteristics of effective practice
   - Assessment competencies required to complete a standards-based report card with accurate, fair, and defensible grades
   - Recommendations for types of scales to use when establishing performance standards
   - Why students don't do homework and what to do about it
   - Suggestions for student record-keeping and prompts for student self-reflection
3. In each revision, we strive to improve the usefulness of the book as a stand-alone teacher and professional development resource. Each chapter of this edition begins with its learning targets and ends with a list of activities intended to help you master the chapter's learning targets. The activities themselves—directions, materials, and forms—are now posted to the book's companion website (https://www.pearson.com/casl-resources) for ease of use.
4. Teaching with *Classroom Assessment* for *Student Learning* since 2004, we continue to encounter important questions not sufficiently addressed in previous editions. We

have incorporated new questions and answers in this edition, both in the main text and as "Frequently Asked Questions."

5. Woven throughout the book are anecdotes from classroom teachers who have worked with our materials to implement sound classroom assessment practices. This edition includes a number of new entries in the form of "My Classroom Then and Now" and "From the Classroom." These stories illustrate how the assessment practices taught in this book have significantly changed students' attitudes and approach to learning.
6. We have included an expanded array of examples to illustrate the concepts presented in each chapter. As in the previous edition, all mathematics and English language arts examples are based on the Common Core State Standards. We have updated science examples to reflect the Next Generation Science Standards and have used examples from the C3 Framework for Social Studies where applicable. All other subject-specific examples derive from commonly found content standards in that subject.
7. We have included a section on assessing dispositions (*affect* targets) as Appendix A.
8. All professional development resources have been created to be used in either individual or team learning contexts. The book's companion website includes information on how to set up learning team study of the book, suggestions for planning and pacing the work, and advice on facilitating team meetings. In addition, we have included tips for success and suggestions for actions that district and building leadership can take to support team learning. This information is also summarized in Appendix B.

Portions of some writing guidelines have been reprinted and adapted from Chapter 5, pp. 91–119, of R. J. Stiggins, and J. Chappuis, *Introduction to Student-Involved Assessment FOR Learning,* 6th ed., 2011, Upper Saddle River, NJ: Pearson Education. Copyright © 2011 by Pearson Education, Inc. Reprinted and adapted by permission of Pearson Education, Inc.

Portions of Chapter 7 have been adapted from *Creating and Recognizing Quality Rubrics,* by J. A. Arter and J. Chappuis, 2006, Upper Saddle River, NJ: Pearson Education.

Contents

CHAPTER 1

Understanding Assessment's Role in Learning

If we know how to do something with assessment information beyond using it to figure grades, we have the capacity to improve learning.

For many of us, *assessment* is probably not at the top of the list of what we want to spend time learning. But we would guess that, in the past few years, you may have been called upon to do one or more of the following things, each of which may have left you wanting a better understanding of why it is important to do or of how to do it well.

- Develop common assessments with other teachers in your subject area or grade level.
- Participate in data analysis work sessions to discuss assessment results and student learning needs.
- Work with a team to "deconstruct" complex content standards in order to identify learning targets for daily instruction and assessment.
- Focus on differentiated instruction as a strategy to help more students master content standards.
- Post learning targets for all of your lessons.
- Attend an assessment-focused workshop and then make a presentation to the rest of the faculty on what should change.
- Move to a standards-based grading system that centers on communicating what students know and can achieve and removes from grades such nonachievement variables as attendance, effort, and behavior.

All of these actions, along with many other current school improvement initiatives involving assessment, are aimed at raising student achievement in an era of high-pressure accountability testing. Each action requires classroom teachers to have

classroom-level assessment expertise to carry it out effectively. And yet the opportunity to develop that expertise may not have been available to you through preservice or inservice offerings. Without a foundation of what we call *classroom assessment literacy*, few if any of these initiatives will lead to the improvements we want for our students.

We have written this book to deepen your classroom assessment literacy; that is, the knowledge and skills needed to do two things: (1) gather *accurate* information about student achievement and (2) use the assessment process and its results *effectively* to improve achievement (Figure 1.1). Taken together, these two components define the domain of classroom assessment quality.

In this first chapter, we begin by discussing the research findings that support the use of assessment information formatively during instruction. Next, we describe a set of assessment quality guidelines drawn from the field of educational measurement and from the research on formative assessment practices, which we call the *Five Keys to Classroom Assessment Quality*. These guidelines lay out what is required to ensure accuracy in our assessments and effective use of their results. We conclude with an overview of subsequent chapters, which provide detailed explanations and examples for each of the keys to quality.

Chapter 1 Learning Targets

At the end of this chapter, you will know the following:

- What it means to be *assessment literate*
- Key research findings on how formative assessment practices can increase student learning
- What the five keys to classroom assessment quality are and how they function together to ensure accuracy and effective use of assessment information

FORMATIVE AND SUMMATIVE ASSESSMENT

What is assessment? In the long-standing view, it is an instrument—an assignment, a quiz, a test, a project—that students complete to show what they have and haven't learned. It is administered regularly, and its results are recorded for use in figuring end-of-term grades. In this view, assessing is separate from teaching—it is an action at the end of a lesson or unit. Its purpose is to measure learning for reporting purposes. The use of the assessment information in this scenario is *summative*, also known as assessment *of* learning.

FIGURE 1.1 Definition of Classroom Assessment Literacy

The knowledge and skills needed to

1. Gather accurate information about student achievement.
2. Use the assessment process and its results effectively to improve achievement.

Assessment, in fact, is simply *the act of gathering information*. We speak of the instrument used as *the assessment*, but it isn't always an instrument. A question posed, an observation made—both can serve as assessments, or actions for the purpose of gathering information. And we can do more with assessment information than use it to figure grades. An overwhelming preponderance of research supports a robust role for assessment during learning, woven throughout teaching, to guide instructional next steps for both the teacher and the student. This is known as *formative* use of assessment information, or assessment *for* learning.

The Importance of Formative Assessment: Assessment *for* Learning

During the past two decades, much has been written about formative assessment—its impact on achievement, what it is and isn't, how to create "formative assessments," how to use formative assessment information and teaching strategies in the classroom. In short, formative assessment has garnered the lion's share of assessment attention and established a pretty good name for itself. Over the past ten years, most, if not all, schools and districts we are familiar with have undertaken initiatives having to do with formative assessment.

Yet the reality is that most assessments in school remain summative—most "count" toward the grade. And, even though they only occur periodically, large-scale accountability assessments continue to dominate considerations of what is most important. However, no research has yet surfaced documenting positive impact on student achievement as a result of large-scale assessment. Neither has summative assessment demonstrated the power to increase learning. Only formative assessment has.

To understand formative assessment's power, we must first understand what it is and isn't. Labeling an assessment "formative" doesn't make it so. We define *formative assessment* as a collection of formal and informal processes teachers and students use to gather and share evidence for the purpose of guiding next steps in learning (Figure 1.2).

Although it is commonly understood that formative assessment can cause gains in student achievement, we have to dig deeper into its many variations to know what gains to expect and which practices are likely to lead to them. For this information, we look to the research. The most well-known body of evidence was assembled and summarized in 1998 by two British researchers, Paul Black and Dylan Wiliam. They conducted a comprehensive review of studies on formative assessment practices that collectively encompassed kindergarteners to college students; represented a range of subject areas, including reading, writing, social studies, mathematics, and science; and

FIGURE 1.2 Definition of Formative Assessment: Assessment *for* Learning

A collection of formal and informal processes teachers and students use to gather and share evidence for the purpose of guiding next steps in learning.

were carried out in numerous countries throughout the world, including the United States (Black & Wiliam, 1998a).

The gains they found were among the largest reported for any educational intervention. Typical effect sizes were between 0.4 and 0.7. In some studies they reviewed, certain practices increased the achievement of low-performing students to the point of approaching that of high-achieving students (c.f. White & Fredericksen, 1998). To put the standard deviation numbers into perspective, a 0.4 to 0.7 achievement gain would produce a 50 to 70 percent increase in the rate of student learning (Wiliam, 2017, p. 38). These are whopping gains—we don't accomplish them with a good night's sleep the night before the test, snacks on the day of the test, or a pep rally. As one might guess, these formative assessment practices were not a matter of ingenious test preparation.

These are the reported gains that have launched a thousand "formative assessment" products. But the size of the achievement gains is only part of the story. The most important, and less well-known, part is what occurred to cause the gains. Perhaps surprisingly, Black and Wiliam's original research review did not treat "formative assessment" as a discrete entity or as a clearly defined treatment. As Lorrie Shepard describes it, it was " . . . a narrative review of quite disparate literatures, including studies of goal orientations, (from motivation research), student self-assessment, task quality, classroom discourse and questioning, types of feedback, mastery learning, and so forth" (Shepard, in Noyce & Hickey, 2011, p. vii). However, from among these varied studies, certain practices emerged as consistently providing substantive learning gains. In summarizing them, Black and Wiliam (1998b) make the following observations:

- "Opportunities for students to express their understanding should be designed into any piece of teaching, for this will initiate the interaction through which formative assessment aids learning" (p. 143).
- "The dialogue between pupils and teachers should be thoughtful, reflective, focused to evoke and explore understanding, and conducted so that all pupils have an opportunity to think and to express their ideas" (p. 144).
- "Feedback to any pupil should be about the particular qualities of his or her work, with advice on what he or she can do to improve, and should avoid comparisons to other pupils" (p. 143).
- "If formative assessment is to be productive, pupils should be trained in self-assessment so that they can understand the main purposes of their learning and thereby grasp what they need to do to achieve" (p. 143).

Therefore, they suggest, the following practices are necessary to achieve the gains promised by formative assessment:

1. *Diagnostic assessment:* The use of classroom discussions, classroom tasks, and homework to determine the current state of student learning or understanding, with action taken to improve learning and correct misunderstandings
2. *Feedback:* The provision of descriptive feedback during the learning, with guidance on how to improve

3. *Student self and peer assessment:* Students accurately analyzing their own work to determine strengths and areas for further work; peers offering each other accurate feedback

Obviously, none of these can be purchased as "formative" items or tests. They are all *practices*, not *instruments*. There is no magic test or tool—we cannot buy our way to achievement-through-assessment nirvana. Fortunately, the practices can all be learned. Even more fortunately, they are not new. Good teaching has included these components all along. However, in our accountability-saturated environment, we may have left more than children behind—we may have also left a few good teaching and assessment practices behind.

Let us compare these high-impact practices to what is often understood to be "formative assessment." When we ask workshop participants to list the formative assessment practices they are familiar with, the lists typically include the following:

- Common assessments
- Interim assessments
- Clickers
- Whiteboards
- Traffic lighting (red, yellow, or green to show level of understanding)
- Thumbs up, thumbs down
- Exit slips

And sometimes the lists include feedback and student self-assessment activities. In the most common responses, the intent is generally diagnostic: the purpose for their use is to provide teachers with information about what students have and haven't yet learned. In our experience, this understanding of formative assessment as a diagnostic activity dominates American classrooms today. There are two problems with this. The first is that it is an incomplete picture of the collection of practices that yielded the achievement gains. The second is that it reflects an incomplete understanding of the mechanisms that underlie formative assessment's effectiveness.

To probe a little more deeply, let's examine the three categories of high-impact formative assessment practices in light of three questions: "Who is examining the assessment information?" "Who is interpreting it?" and "Who is acting upon it?"

In the first group of practices—gathering diagnostic assessment information—the teacher examines the information, whether it is from a question, a discussion, an assignment, a quiz, or whatever. Then the teacher interprets the information: What does this mean students understand? Don't understand? Last, the teacher determines what next steps to take to address the learning challenges noted and carries them out. In the 1960s, Madeleine Hunter called this "monitor and adjust." It has been a part of good teaching since Socrates and probably before: teaching with your eyes open has always been a good idea. The teacher examines, the teacher interprets, and the teacher acts. However, if the teacher stops short of acting on the information, due perhaps to

time constraints or an unhelpful picture of student learning needs, there will be no increased learning. *No action, no gain*.

In the second group—feedback practices—the teacher examines the information and interprets it. Then the teacher conveys the interpretation to the student: What does this mean they are good at? Where do they need to focus their efforts? What next steps should they take? The student has to correctly interpret the teacher's feedback and then act on it. So, in this case, the teacher examines, the teacher interprets, and the teacher acts to share the information. However, if the student doesn't also examine the information, understand the teacher's interpretation, and act on the feedback, there will be no achievement gain as a result. It isn't the *giving* of feedback that causes the gains; it's the *acting* on feedback on the part of the student that does. *No action, no gain*.

In the third group—student self-assessment and peer feedback activities—it is the students who are examining the information, interpreting it, and acting on it. If all three actions (examining, interpreting, and acting) are *not* undertaken by the student, there is considerably less likelihood of increased learning. *No action, no gain*.

When formative assessment practices are working well, teachers and students adjust their actions based on guidance from the assessment information. The extent to which the information is accurate, accurately interpreted, communicated in an actionable form, *and acted upon* determines the magnitude of its effect on learning. Without this understanding, we are at risk of creating a test bank, adopting a program or an item bank, and believing we are "doing" formative assessment.

Where the Power of Formative Assessment Lies

New Zealand researcher John Hattie spent more than fifteen years analyzing research on 138 different factors that have been put forth as contributing to increased student achievement. He examined more than 800 meta-analyses (collections of studies focused on a single factor), which taken together comprised more than 50,000 studies involving more than 240 million students. Hattie drew conclusions about the relative impact of each factor studied and wrote *Visible Learning* (2009) to offer an explanatory story of key influences on student learning. He frames the central message running throughout his text as this:

> The act of teaching reaches its epitome of success after the lesson has been structured, after the content has been delivered, and after the classroom has been organized. The art of teaching, and its major success, relate to "what happens next"—the manner in which the teacher reacts to how the student interprets, accommodates, rejects and/or reinvents the content and skills, how the student relates and applies the content to other tasks, and how the student reacts in light of success and failure apropos the content and methods that the teacher has taught. (pp. 1–2)

Hattie explains that feedback *from the student to the teacher* is central to taking actions that increase learning. It is our formative assessment practices that give us

this feedback. Dylan Wiliam calls assessment the *bridge between teaching and learning*, which allows us to engineer effective learning environments for students (2017, p. 55). He describes it this way:

> Assessment occupies such a central position in good teaching because we cannot predict what students will learn, no matter how we design our teaching . . . Assessment is *the* central process in instruction—students do not learn what we teach. If they did, we would not need to keep gradebooks. We could, instead, simply record what we have taught. (pp. 52–54)

And in a chapter called "Feedback and Instructional Correctives" from a published handbook of research on classroom assessment, Wiliam makes the following observation:

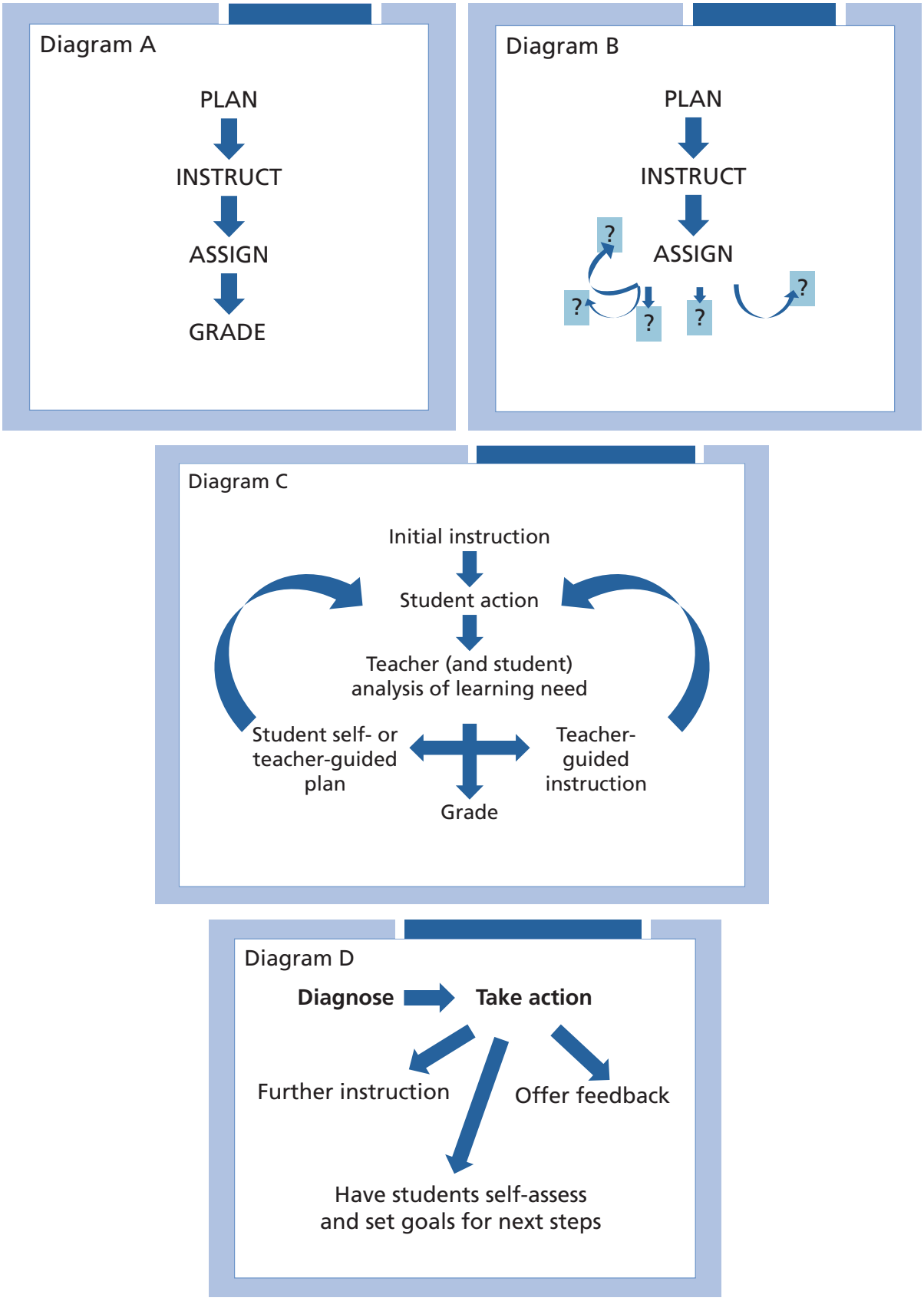
> If learning is a predictable process, which most of the time proceeds as planned, then instructional correctives should be needed rarely; most of the time, students will learn what they have been taught, but occasionally they will not. In this view, feedback and instructional correctives are pathological aspects of instruction, needed only when things go wrong . . . However, if learning is an unpredictable process, then feedback and instructional correctives are central to learning; without them, little effective instruction can take place. (Wiliam, 2013, p. 197)

The intent of diagnostic assessment is to pay attention to what students' questions, conversations, and work show us they *are* and *aren't* learning and to do something about it before we hold them accountable for having learned it. Although our pacing guides may have been designed to reflect the model of teaching shown in Diagram A of Figure 1.3, the reality of how learning moves forward looks more like Diagram B. For teaching to engender increases in learning, we need to adopt a model like that shown in Diagram C: when students interact with our teaching, we notice learning needs and then take action. The action may be further or different instruction, it may be to offer feedback, or it may be that students are ready to self-assess and set goals for their own learning (Diagram D).

The Centrality of the Student

So far, we have focused on using assessment to meet the information needs of the teacher, but the student is an equally important decision maker *whose information needs must be met* during the learning as well. In our experience, student needs get lost in the formative assessment picture because it centers so heavily on teacher's needs. We link the phrase *assessment for learning* to formative assessment to make sure we include practices that meet students' information needs during learning and that develop their internal sense of academic self-efficacy.

FIGURE 1.3 Models of Assessment's Relationship to Teaching



Educational researchers emphasize the centrality of student as decision maker when they describe how students benefit from formative assessment:

- "Formative assessment, therefore, is essentially feedback (Ramaprasad, 1983) to the teachers and to the pupil about present understanding and skill development in order to determine the way forward" (Harlen & James, 1997, p. 369).
- "The indispensable conditions for improvement are that 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" (Sadler, 1989 p. 121, emphasis in original).
- "Implicit in the nature of formative assessment is the development of the metacognitive awareness needed by students to plan, monitor, and assess their learning and their work (Clark, 2012; Jones, 2007). Metacognition refers to one's knowledge of cognition as well as the processes of monitoring, controlling, and regulating one's own cognition (Pintrich, 2002). Research from a variety of theoretical perspectives has demonstrated that metacognition is associated with better learning and achievement (Azevedo, 2005; Hacker, Donloskey, & Graesser, 1998)" (Andrade, 2013, p. 24).

Summative Assessment: Assessment *of* Learning

We define *summative assessment* as *the use of information to make an overall judgment about level of achievement or program effectiveness*. Summative assessment isn't bad or wrong, but it harms learning when it happens too soon in the teaching-learning process. In light of a 1988 study, researcher Terry Crooks noted that "[t]oo much emphasis has been placed on the grading function of evaluation and too little on its role in assisting students to learn." Dylan Wiliam summarized Crooks's findings on the effects of too much summative assessment as follows:

- Reduction in intrinsic motivation
- Increase in test anxiety
- Increased ability attributions for success and failure, which undermines effort
- Lowered self-efficacy in weaker students
- Reduction in effective feedback
- Poorer social relationships among students (Wiliam, 2013, p. 205)

These are all steps in the opposite direction we hope to go with our students. Employing formative assessment practices during learning and summative assessment practices after learning has taken place significantly increases success for all students.

FIVE KEYS TO QUALITY CLASSROOM ASSESSMENT

We have begun this overview chapter with a discussion of formative and summative assessment practices, not to demonize one and glorify the other but to reinforce the many uses that assessment can serve in the classroom. And, as important as

understanding those uses is, they fit into a bigger picture of assessment quality that begins first with accuracy. Formative and summative assessment practices each rely on a foundation of accurate information: *no accuracy, no gain*. If the information from an assessment is inaccurate—if it offers a distorted picture of what students have and have not learned—any decision we make has the potential to harm learning. So, knowing how to evaluate our assessments themselves for quality is as important as knowing how to use assessment information effectively, either formatively or summatively.

We call our "big picture" the *Five Keys to Classroom Assessment Quality*. Their content is drawn from the measurement field and adapted to the needs of the classroom. The first three keys define the conditions needed for accuracy, and the last two keys define the conditions for effective use.

Key 1: Clear Purpose. Assessments are designed to serve the *specific information needs of intended user(s)*.

Key 2: Clear Targets. Assessments are based on clearly articulated and appropriate *achievement targets*.

Key 3: Sound Design. Assessments *accurately measure* student achievement.

Key 4: Formative Usefulness. Assessments yield results that are *used formatively* to further learning.

Key 5: Effective Communication. Assessments yield results that are used to *communicate about student learning accurately*.

Figure 1.4 shows a graphic representation of the five keys to quality.

Key 1: Clear Purpose

We assess, in part, to gather information about student learning that will inform instructional decisions. Teachers and students make decisions every day that drive learning—they need regular information about what each student has and has not yet learned. We make some decisions frequently, such as when we decide what comes next in student learning within lessons or when we diagnose problems. Typically, these decisions, made day to day in the classroom based on evidence gathered from classroom activities and assessments, are intended to support student learning—to help students learn more. As we have seen, these are known collectively as *formative assessment* practices: formal and informal processes teachers and students use to gather evidence for the purpose of improving learning.

We make other decisions periodically, such as when we assign report card grades or identify students for special services. In this case, we rely on classroom assessment evidence accumulated over time to determine how much learning has occurred. Other instructional decisions are made less frequently, such as when school districts assess to

FIGURE 1.4 Five Keys to Classroom Assessment Quality

inform the community about the efficacy of school programs or to decide whether to continue or discontinue a particular program. Often these decisions are based on results of once-a-year standardized tests reported in broad categories of learning. These are all examples of *summative assessment*: assessments that provide evidence of student achievement for the purpose of making a judgment about student competence or program effectiveness.

As you can see, assessment information can serve a variety of users—such as students, teachers, administrators, parents—and uses, both formative and summative.

In any assessment context, whether informing decisions along the way or measuring achievement after it has happened, we must start by understanding the information needs of the intended users. Those needs will determine the form and frequency of assessment as well as the level and type of detail required in the results. The following are core competencies of an assessment literate educator with respect to Key 1.

COMPETENCY 1: IDENTIFY THE ASSESSMENT PURPOSE

1. Know the options for use of assessment information:
   - Formative—to diagnose learning needs
   - Formative—to offer feedback
   - Formative—for students to offer peer feedback
   - Formative—for students to engage in self-assessment and goal setting
   - Formative—for students to track, reflect on, and share their learning progress
   - Summative—to contribute to a final grade
   - Summative—to contribute to program evaluation
2. Understand how to embed each of the options, as appropriate, in planning a unit of instruction.
3. Be disposed to use assessment information formatively in the classroom every day.

Key 2: Clear Targets

Besides beginning with intended use in mind, we must also start the assessment process with a clear sense of the learning to be assessed—the achievement expectations we hold for our students, the content standards at the focus of instruction. We call these *learning targets*. We first make sure that our learning targets are clear to us by classifying them and by deconstructing complex content standards into underpinning learning targets that guide day-to-day instruction. When our learning targets are clear to us as teachers, the next step is to ensure they are also clear to students. We know that students' chances of success improve when they start out with a vision of where they are headed: The success of feedback and self-assessment both hinge on students' understanding the intended learning. The following are core competencies of an assessment literate educator with respect to Key 2.

COMPETENCY 2: ESTABLISH CLEAR LEARNING TARGETS

1. Know how to classify learning targets by type.
2. Deconstruct complex content standards into lesson-level learning targets.
3. Plan instruction on the basis of clear learning targets.
4. Make learning targets clear to students.

Key 3: Sound Design

Assessments can accurately or inaccurately reflect the current level of student learning. Obviously, our goal always is to generate accurate information. The previous two keys, *clear purpose* and *clear targets*, lay the foundation for quality assessment by telling us what

needs to be assessed and what kind of results are needed. Next comes the challenge of creating an assessment that will deliver those results. This requires an assessment method capable of reflecting the intended target. Will it be selected response, written response, performance assessment, or personal communication? These four assessment methods are not interchangeable: each has strengths and limitations, and each works well in some contexts but not in others. Our task always is to choose a proper method for the intended purpose and learning targets—the quality of our assessments hinges on it.

After we have chosen a method, we must build the assessment of high-quality items, tasks, or exercises accompanied by proper scoring schemes. We must sample well by including just enough exercises to lead to confident conclusions about student achievement. And finally, every assessment situation brings with it its own list of things that can go wrong and that can bias the results or cause them to be inaccurate. To prevent these problems, we must recognize and know how to eliminate or control for sources of bias. The following are core competencies of an assessment literate educator with respect to Key 3.

COMPETENCY 3: ENSURE ACCURACY OF THE INFORMATION

1. Know when to use which assessment method.
2. Create items, tasks, and scoring guides that adhere to standards of quality.
3. Determine appropriate sample size.
4. Control for factors that can render information inaccurate (bias and distortion).
5. Know how to create or select items, tasks, and scoring guides for formative use.

Key 4: Formative Usefulness

As we have described earlier in this chapter, knowing how to diagnose student learning needs and acting on that information, whether by offering further instruction, feedback, or opportunities for student self-assessment and goal setting, are crucial to successful teaching. And student involvement in the assessment process is a central requirement for activating assessment's role in increasing learning. The decisions that contribute the most to student learning success are made not by adults working in the system *but by students themselves*. *Students* decide whether the learning is worth the effort required to attain it. *Students* decide whether they believe they are capable of reaching the learning targets. *Students* decide whether to keep learning or to quit working. It is only when students make these decisions in the affirmative that our instruction can benefit their learning. So an essential part of our classroom assessment job is to keep students in touch with their progress as learners in ways that keep them believing in themselves as learners so they will keep trying. The following are core competencies of an assessment literate educator with respect to Key 4.

COMPETENCY 4: USE FORMATIVE ASSESSMENT PRACTICES EFFECTIVELY

1. Have a repertoire of strategies for diagnosing needs for further instruction.
2. Offer feedback in such a way that students can and will act on it and that action leads to further learning.

3. Engage students in offering effective peer feedback.
4. Engage students in accurate self-assessment and productive goal setting.
5. Be disposed to search out what each learner needs every day.

Key 5: Effective Communication

Once the information needs are clear, the learning targets are clear, and the information gathered is accurate, an assessment's results must be communicated to the intended user(s) in a timely and understandable way. When we do this well, we keep track of both formative and summative assessment results and devise sharing options suited to the needs of whoever will act on the results. Communication of formative assessment information provides the kind of descriptive feedback learners need to grow. Communication in a summative assessment context leaves all recipients understanding the sufficiency of student learning, such as when we convert summative assessment information into grades that accurately reflect achievement at a point in time. The following are core competencies of an assessment literate educator with respect to Key 5.

COMPETENCY 5: COMMUNICATE ABOUT STUDENT LEARNING ACCURATELY

Formative Information

1. Track formative assessment information as needed to inform others about student progress and learning needs.
2. Engage students in tracking, reflecting on, and sharing their learning progress.

Summative Information

3. Record formative and summative assessment information accurately.
4. Combine and summarize information appropriately to accurately reflect current level of student learning.

Our mission with this book is to help improve the classroom assessment practices of all teachers wanting to do so. If we are successful, together we'll move assessment practices in the classroom from a collection of less-effective practices to a model that is grounded in the research of how to use classroom assessment to improve student learning. Figure 1.5 illustrates key shifts in thought and practice that are hallmarks of classroom assessment competency.

When most people think about assessment quality, they often focus on the accuracy of the instrument itself—the extent to which the assessment items, tasks, and scoring rubrics produce accurate information. This is a key feature of assessment quality, but it does not encompass what we have to understand to use the information well. If our assessment practices result in accurate information without significant benefit to student learning, we say a crucial component of quality is missing. And because accurate assessment information skillfully used causes further learning, this definition of classroom assessment literacy should figure substantively in our understanding of

FIGURE 1.5 Shifts in Thinking

From	To
Classroom tests disconnected from the focus of instruction	Classroom tests reflecting the written and taught curriculum
Assessments using only selected response formats	Assessment methods selected intentionally to reflect specific kinds of learning targets
"Mystery" assessments, where students don't know in advance what they are accountable for learning	Transparency in assessments, where students know in advance what they are accountable for learning
All assessments and assignments, including practice, "count" toward the grade	Some assessments and assignments "count" toward the grade; others are for practice or other formative use
Students as passive participants in the assessment process	Students as active users of assessment as a learning experience
Students not finding out until the graded event what they are good at and what they need to work on	Students being able to identify their strengths and areas for further study during learning

what it means to teach well. In From the Field 1.1, District Superintendent Jim Lloyd describes how assessment for learning has become part of his district's culture. In My Classroom Then and Now 1.1, middle school math teacher Janna Smith explains her shift in thinking about assessment and its impact on students.

From the Field 1.1

Jim Lloyd

Reflection as Assistant Superintendent, 2011

They say that "what gets measured gets done." While I believe there is some merit to this, I believe that a better way of phrasing this work is to say that "what is worthwhile, practical, and useful endures." Assessment *for* learning passes the worthwhile, practical, and usefulness tests.

In our district, we believe that all administrators play a vital role in helping classroom assessment for student learning gain traction. If our job is to educate all students up to high standards, then all the educators working within that system must have a clear focus and even clearer understanding as to what things make a profound impact on the achievement of the children. Clearly, classroom assessments that are accurate and communicated appropriately are critical to our mission.

Our district leadership team set two goals that we wanted to be world-class at—clear learning intentions and high-quality feedback. We've had the good

fortune of increasing our staff's capacity in these areas through a partnership with Cleveland State University and have generated significant momentum, which in turn has impacted teachers' classroom practices and student learning. We have created local, cross-grade-level learning teams and are using our own teachers as a means to further our capacity and understanding of classroom assessment.

Classroom assessment *for* student learning isn't a simplistic instructional strategy. Rather, it is a way of being. It is a type of pedagogy that when used as a matter of practice makes a profound impact on the way the teacher engineers her learning environment and how the students work within it. We have witnessed firsthand how the learning environments in our school district have gone from great to greater as classroom assessment *for* student learning becomes more deeply embedded in our classrooms and in our students.

We believe that in order for systemic change to occur and endure it must be embraced by those it impacts most of all—teachers and students. Teachers who engage in quality classroom assessment *for* student learning as a matter of instructional practice have clearer student learning intentions, offer more regular and descriptive feedback, create more accurate assessments, communicate assessment results more effectively, and involve students in the assessment process. All are ingredients for high levels of student engagement and learning. It has been our experience that Classroom Assessment for Student Learning impacts all learners—high, middle, and low achieving.

Reflection as Superintendent, 2018

Approximately eight years ago, our school district of 3,800 had teachers implement the strategies outlined in the Classroom Assessment for Student Learning model as a matter of practice. Since that time, I have become superintendent, and to this day, those same instructional practices are being implemented across our system. The classroom assessment strategies have been passed on from one teacher to the next and have been galvanized through professional study, practice, staff meetings, modeling, and peer coaching. Specifically, the concept of clear learning targets continues to resonate with our staff. While the learning standards may have changed, the idea that students have a higher probability of hitting a target that they can see and understand has not changed.

We continue to believe that in order for systemic change to occur and endure it, must be embraced by those that it impacts most of all—teachers and students. We have found that teachers who engage in quality classroom assessment *for* student learning as a matter of practice have clearer student learning intentions, offer more regular and descriptive feedback, create more accurate assessments, communicate assessment results more effectively, and involve students in the assessment process. When teachers work collaboratively to learn from one another and fine-tune these techniques, their collective knowledge increases, and it serves as a catalyst to improve student understanding.

Source: Jim Lloyd, Ed.D., Olmsted Falls City Schools, Olmsted, OH.

My Classroom Then and Now 1.1

Janna Smith

I used to . . .

I used to think of assessment as an "ending" to a learning event. When preparing to teach a unit, my planning primarily consisted of looking at the objectives and crafting activities that would engage all students. The word *assessment* was a noun that referred only to a task generally used at the end to determine a grade. The things students were asked to do as part of an endpoint assessment task may—or may not—have been aligned to the key objectives. Items on an end-of-unit test were usually selected response or short-answer/essay, but for the most part, that was just for variety's sake.

Now I . . .

Now, *assessment* is not a singular noun referring to an individual test or task but refers to an ongoing process that is interwoven with instruction. The process no longer happens only at the end; in fact, it begins with pre-assessment. With my current group of seventh-grade mathematics students, I introduce a grid at the onset of each unit. The grid lists the learning targets for that unit, with space for students to record their analysis of the results of their pre-assessment, target by target. Additional boxes are included for each target, where students list sources of evidence from daily work, quizzes, etc. Throughout the unit, we periodically pause for students to select which of the learning targets their evidence indicates they are doing well with and on which they need more support. I use their self-assessments along with my own records of their performance to determine mini-lessons, small-group instruction topics, and areas where we might move more quickly.

What I notice as a result . . .

Making assessment *for* learning come to life in my own classroom has renewed my zeal for teaching. I am more focused on essential learning targets, and my students always know what we are learning, how they are doing, and what we can work on together to close any gaps. They have become fantastic self-assessors, using their "evidence files" to determine their own strengths and challenges. Most importantly, they are becoming more confident problem solvers who no longer avoid and complain about math. From my experience in the classroom, I know firsthand that using these strategies has a significant positive impact on student learning.

Source: Used with permission from Janna Smith, classroom teacher, Far Hills Country Day School, Far Hills, NJ.

The teacher competencies described earlier and listed in Figure 1.6 represent the big picture of what an assessment-literate teacher knows and can do within each of the five keys to quality. They can be thought of as the *content standards* for this program

FIGURE 1.6 Teacher Assessment Competencies

Competency 1: Identify the Assessment Purpose

1. Understand the information needs of all users
2. Know when to use assessment information formatively and when to use it summatively
3. Understand how to embed formative assessment practices in a unit of instruction
4. Be disposed to use assessment information formatively in the classroom every day

Competency 2: Establish Clear Learning Targets

1. Know how to classify learning targets by type
2. Deconstruct complex content standards into lesson-level learning targets
3. Plan instruction on the basis of clear learning targets
4. Make learning targets clear to students

Competency 3: Ensure Accuracy of the Information

1. Know when to use which assessment method
2. Create items, exercises, and scoring guides that adhere to standards of quality
3. Determine appropriate sample size
4. Control for factors that can render information inaccurate (bias and distortion)
5. Know how to create or select items, exercises, and scoring guides for formative use

Competency 4: Use Formative Assessment Practices Effectively

1. Have a repertoire of strategies for diagnosing needs for further instruction
2. Offer feedback in such a way that students can and will act on it productively to create further learning
3. Engage students in offering effective peer feedback
4. Engage students in accurate self-assessment and productive goal setting
5. Be disposed to search out what each learner needs every day

Competency 5: Communicate About Student Learning Accurately
Formative Information:

1. Track formative assessment information as needed to inform others about student progress and learning needs
2. Engage students in tracking, reflecting on, and sharing their learning progress

Summative Information:

1. Record summative assessment information according to the learning represented
2. Combine and summarize information appropriately to accurately reflect current level of student learning

of study. Within each of these competencies are specific understandings and actions, taught in each of the following chapters. We understand that these classroom assessment competencies are not entirely new. Effective teachers already know a considerable amount about assessment; these practices have always been a part of good teaching. We offer our standards of good assessment practice to provide a cognitive structure for defining the domain and to permit you to determine where you want to deepen your own assessment expertise.

THE CHAPTERS AHEAD

Chapter 2, "Establishing Purpose: Assessment *for* and *of* Learning," focuses on Key 1 of the Five Keys to Classroom Assessment Quality. It describes the key users of classroom assessment information and their information needs. It offers suggestions for ensuring that you have a balanced assessment system in your classroom. It also goes into more detail about specific formative assessment practices: diagnostic assessment, provision of effective feedback, and teaching students to self-assess and set goals likely to lead to further learning.

Chapter 3, "Defining the Intended Learning," focuses on Key 2 of the Five Keys to Classroom Assessment Quality. It defines kinds of learning targets, explains how to turn broad content standards into classroom-level targets, and illustrates ways to make them clear to students.

Chapter 4, "Planning the Assessment: Sound Design," focuses on Key 3 of the Five Keys to Classroom Assessment Quality. It introduces the Assessment Development Cycle, with a focus on the planning steps. It describes the four assessment methods and provides practice in matching methods to learning targets. It also offers guidance on sampling and avoiding sources of bias.

Chapters 5 through 8 explain how to create assessments using each individual assessment method, how to audit them for quality, and ways to use their results formatively. They focus on Keys 3 and 4 of the Five Keys to Classroom Assessment Quality. Chapter 5 is "Designing and Using a Selected Response Assessment," Chapter 6 is "Designing and Using a Written Response Assessment," Chapter 7 is "Designing and Using a Performance Assessment," and Chapter 8 is "Using Personal Communication as an Assessment Method."

Chapters 9 through 11 treat the communication competencies in both formative and summative contexts, focusing on Keys 4 and 5 of the Five Keys to Classroom Assessment Quality. Chapter 9 is "Deriving Accurate, Fair, and Defensible Summary Grades," Chapter 10 is "Students Tracking and Reflecting on Their Own Learning," and Chapter 11 is "Conferencing with and About Students."

Techniques for student-involved assessment are woven throughout the chapters. Chapter 2 introduces the Seven Strategies of Assessment for Learning, a sequence of high-impact formative assessment practices designed to provide guidance on day-to-day use of assessment information by both teachers and students. Chapter 3 provides specific ways to make learning targets clear to students. Chapter 4 offers suggestions

for using test plans to help students study. Chapters 5 through 8 include method-specific suggestions for involving students in feedback, peer feedback, self-assessment, and goal setting. Chapters 10 and 11 offer techniques for involving students in tracking and communicating about their own learning.

Summary

Quality classroom assessment produces *accurate information* that is *used effectively* to increase student learning. This is the "do it right" and "use it well" of the book's title. *Accurate information* comes from clearly identifying the purpose(s) for which information about student learning is being gathered; clearly defining learning targets, focusing instruction on those learning targets, and making them clear to students; using the appropriate assessment method well, selecting a sample to accurately represent achievement of the intended learning, and avoiding circumstances that might bias results. *Effective use* includes relying on accurate assessment results to plan instruction and interventions; using descriptive feedback, self-assessment, goal setting, progress tracking, and self-reflection tactics to help students understand their successes and areas for further study; and tracking and communicating achievement information clearly and in a way tailored to the user's needs.

These two overarching aspects of quality, *accuracy* and *effective use*, form the focus of the succeeding chapters of this book. Through the study and application of ideas in each chapter, you will learn to select, create, and use assessments that are of high quality and that engender student success.

CHAPTER 1 ACTIVITIES

End-of-chapter activities are intended to help you master the chapter's learning targets. They are designed to deepen your understanding of the chapter content, provide discussion topics for collaborative learning, and guide implementation of the content and practices taught in the chapter. Directions and materials for completing each activity can be found at https://www.pearson.com/casl-resources.

Chapter 1 Learning Targets

At the end of this chapter, you will know the following:

1. What it means to be *assessment literate*
2. Key research findings on how formative assessment practices can increase student learning
3. What the five keys to classroom assessment quality are, and how they function together to ensure accuracy and effective use of assessment information

Mastering Chapter 1 Content

Activity 1.1 Reflecting on Learning from Chapter 1
Activity 1.2 Setting Up a Growth Portfolio
Activity 1.3 Auditing Your Own Formative Assessment Practices
Activity 1.4 Connecting Your Own Experiences to the Keys to Quality
Activity 1.5 Completing the Assessment Practices Inventory
Activity 1.6 Surveying Students

CHAPTER 2

Establishing Purpose: Assessment *for* and *of* Learning

In Chapter 1, we established that we can assess for two basic reasons: to *support* continued learning or to *determine and report* on level of achievement. Formative uses of assessment information are required for effective teaching; summative uses are required for our reporting systems. Assessment-literate educators know how to use assessment information to meet the needs of all important instructional decision makers, including students, parents, instructional leaders, policy makers, and, of course, themselves.

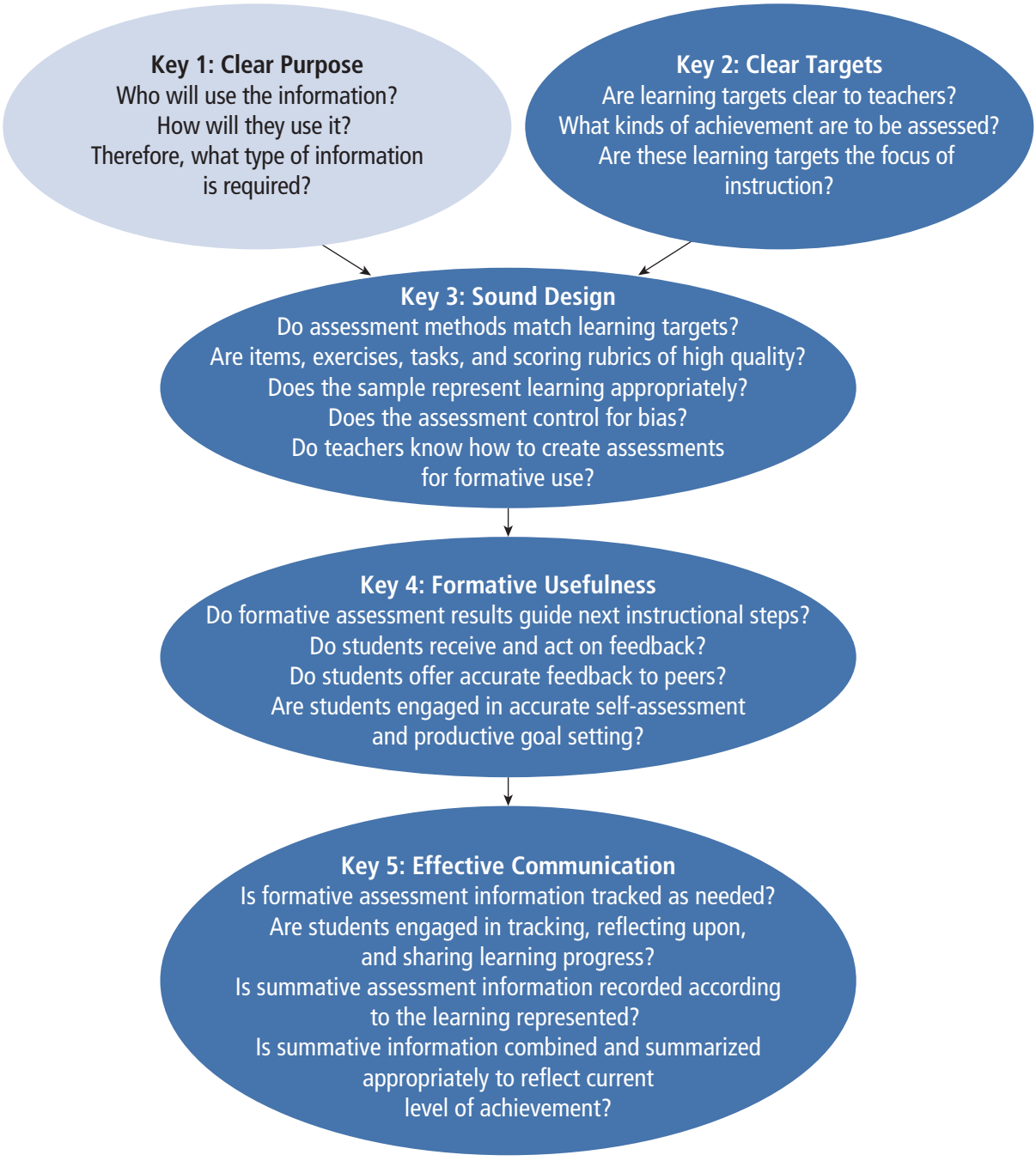
This chapter begins our focus on the five keys to quality with Key 1: Clear Purpose (Figure 2.1). Commonly asked questions such as "Why do we have to give so many assessments?," "Which information should be included in the final grade?," "How much formative and summative assessment information should I gather?," and "When and how often should I involve the student?" trace their answers back to establishing the purpose for an assessment. Who needs assessment information? What decisions will they make on its basis? When will they need it? What type of information is most suited to the intended decision? Establishing an assessment's purpose requires that we answer these four questions at the outset of the assessment planning process.

Chapter 2 Learning Targets

At the end of this chapter, you will know the following:

- How formative and summative assessment fit into a balanced assessment system
- Options for diagnostic use of assessment information
- What it means for an assessment to have *instructional traction*
- Characteristics of effective feedback
- Prerequisites to accurate self-assessment and goal setting
- What the Seven Strategies of Assessment for Learning are and how they connect to research on formative assessment

FIGURE 2.1 Five Keys to Classroom Assessment Quality



A BALANCED ASSESSMENT SYSTEM

As we stated in Chapter 1, assessment is simply *the act of gathering information*. However, we don't (or shouldn't) assess without a good reason. In education, as in many other fields, the reason for assessing is to inform a decision. A balanced assessment system identifies key decision makers, what kinds of decisions they will make, and what types of information they will need. Without this inventory, we may be over-assessing for certain purposes and under-assessing for others.

Who are the key users of classroom assessment information? The first thought that may come to mind is *teachers*, followed perhaps by parents, students, administrators, and the public. What kinds of decisions do they make? While they do all use assessment information, the decisions they make are quite varied. No one type of assessment can meet everyone's information needs. Classroom assessments serve the day-to-day decisions; interim, benchmark, and common assessments serve periodic decisions; and accountability tests serve annual decisions. A district-level balanced assessment system is designed to meet both formative and summative information needs across all three levels of assessment use (Chappuis, Commodore, & Stiggins, 2010). Figure 2.2 summarizes the three levels of assessment, the purposes they serve, the people who use the information generated, and the uses they make of it.

Balancing Formative and Summative Assessment

Establishing a balance between formative and summative uses at the classroom and interim/benchmark levels does not mean that we have an equal amount of each. In traditional classroom practice, the balance is skewed toward summative: most, if not all, assessments figure into the final grade. And at the interim/benchmark level, even those assessments labeled as "formative" are often used only summatively, which has given rise to researcher Dylan Wiliam's question: "What's formative about it?"

To understand how to balance formative and summative assessment, let's refresh our understanding of the differences between formative and summative assessment, remembering first that those two terms refer not to the instrument but to the use of the information generated.

- *Formative assessment*: Formal and informal processes teachers and students use to gather evidence for the purpose of improving learning. When engaged in formative assessment practices, teachers use assessment information during the learning to diagnose student needs, plan next steps in instruction, provide students with targeted practice, and offer effective feedback. Students use assessment information to act on feedback, to offer each other effective feedback, to self-assess, and to set goals for improvement. They can also use it to track, reflect on, and share their progress.
- *Summative assessment*: Use of evidence of student achievement to make a judgment about student competence level. When engaged in summative assessment, teachers use assessment information *after* learning has taken place to determine the level of student achievement at a given point in time in order to determine a student's report card grade. The assessment instruments used are most often chapter and unit tests, final exams, and term projects.

We call formative assessment by another name, *assessment* for *learning.* Formative assessment has taken on a number of different meanings, and is commonly interpreted as assessing frequently and using the results to plan the next steps in instruction, thus meeting teachers' information needs. This narrow understanding of formative assessment ignores practices that meet students' information needs, so assessment *for*

FIGURE 2.2 Elements of a Balanced Assessment System

Level of Assessment	What Is the Assessment Purpose?	Who Will Use the Information?	How Will It Be Used?
Classroom assessment	To measure level of student achievement on learning targets taught	Teachers	Summative: To determine grades for reporting purposes
		Individual teachers, teacher teams	Formative: To revise teaching plans for next year/semester
	To diagnose student strengths and areas needing further work		Formative: To plan further instruction; to differentiate instruction
		Teachers, students	Formative: To provide feedback to students
		Students	Formative: To self-assess and to set goals for next steps
District benchmark, interim, or common assessments	To measure level of student achievement toward content standards	District and school leadership, teacher teams	Summative: To evaluate program effectiveness
			Formative: To identify standards in need of more effective programs
	To identify students and/or portions of the curriculum needing additional/different instruction	District and school leadership, teacher teams, individual teachers	Formative: To plan interventions for groups or individuals
Annual testing	To measure level of student achievement on preset content standards	District and school leadership, teacher teams, individual teachers	Summative: To evaluate achievement level of each student and summarize across students
		District and school leadership, teacher teams	Summative: To determine program effectiveness
			Formative: To identify program or curriculum needs
	To identify percentage of students meeting state content standards	State leadership, district and school leadership	Summative: To evaluate schools and districts
			Summative: To issue sanctions and rewards
		State leadership, district and school leadership, teacher teams	Formative: To develop programs or interventions for groups or individuals

Source: Reprinted with permission from J. Chappuis & R. J. Stiggins, 2017. *An introduction to student-involved assessment for learning (7th ed.)*, pp. 23–24. Boston, MA: Pearson.

learning is the term we use to include substantive student involvement in assessment processes. We call summative assessment *assessment of learning* to clarify its role in judging the learning that has occurred at an end point. See Figure 2.3 for a summary of key differences.

FIGURE 2.3 Key Differences Between Formative and Summative Assessment

	Assessment for Learning	Assessment of Learning
Reasons for Assessing	• Promote increases in achievement • Support ongoing student growth and improvement	• Document individual or group achievement or mastery of standards • Measure achievement status at a point in time for purposes of reporting or accountability
Audience	• Teachers about students • Students about themselves	• Others about students
Place in Time	• A process during learning	• An event after learning
Primary Users	• Students, teachers, parents	• Policy makers, program planners, supervisors, teachers, students, parents
Typical Uses	• Provide students with insight to improve achievement • Help teachers diagnose and respond to student needs • Help parents see progress over time • Help parents support learning	• Grading decisions • Promotion and graduation decisions • Certify student competence • Sort students according to achievement

Source: Adapted from J. Chappuis & S. Chappuis, 2002. *Understanding school assessment,* pp. 17–18. Upper Saddle River, NJ: Pearson Education.

WHY THE DISTINCTION IS IMPORTANT. Understanding the distinction between assessment *for* learning and assessment *of* learning is pivotal to realizing gains in student achievement. The larger gains attributable to formative assessment practices will not materialize unless certain conditions are met (Chappuis, 2015, pp. 5-6):

1. *Aligned to instruction:* The assessment instrument or event is designed so that it aligns directly with the content standards to be learned. All items or tasks match what has been or will be taught.
2. *Diagnostic for teachers:* The instrument or event provides accurate information of sufficient detail to pinpoint specific problems, such as misunderstandings, so that teachers can make good decisions about what actions to take, and with whom.
3. *Diagnostic for students:* If the assessment is intended for student decision-making, the information provided gives specific guidance on what parts of the learning targets have been mastered and what parts are in need of further action.
4. *Timing of results:* The results are available in time to take action with the students who generated them.
5. *Time for action:* Teachers and students have time to and do indeed take action based on the results.

If one or more of these conditions is missing, the assessment will not cause increased learning, no matter what it is called.

HOW MUCH FORMATIVE ASSESSMENT INFORMATION TO GATHER. How much formative information is enough? Or: "What's the ratio?" To explore this question, let's first think of how athletic coaches determine the balance. They don't spur their players to greatness by scheduling as many games as possible. Rather, they schedule as many practices between games as possible. While their players are engaged in activities such as drills and simulations, coaches don't assess them summatively—they don't award points and grades. Rather, they watch and intervene with corrections, demonstrations, and feedback consistently. They schedule as many practice opportunities as they can prior to each game. If we think of formative assessment as the "practice" and summative assessment as the "game," what would you say is the optimal ratio? We suggest that the desired balance in sports and in the classroom is as many formative assessment events, undertaken by both students and teachers, as are needed to advance achievement before we are required to make a final judgment of level of achievement. If our job as teachers is to maximize learning for each student, then surely we will plan as much practice as possible before holding each accountable for having learned.

Considering the Student's Information Needs

In the previous coaching analogy, we looked at balancing formative and summative events. Now let's think about the student. From a student's point of view, most every assignment is an assessment. Students complete assessments to meet teachers' needs, their district's needs, their state's needs, and their nation's needs. How often do they experience assessments that meet *their* needs—not indirectly through the decisions that others make on their behalf but directly? What do you believe are the student's information needs? Black and Wiliam (1998a) remind us that it would be a mistake to regard the student as the passive recipient of assessment information: Formative assessment practices that yielded the highest achievement gains met *students'* information needs.

In a nutshell, students need to understand three things: what the intended learning looks like when it is done well, where they are now with respect to that ultimate goal, and what they can do to close the gap between where they are and where they need to be. They need this information as feedback regularly throughout their learning. Keeping students in touch with their progress is a strong motivator for continued effort. In addition, they need to know how to interpret this information to determine what their relative strengths and weaknesses are, and to direct their next efforts.

Barriers to Optimizing the Balance in the Classroom

"*If I don't grade it, they won't do it*." It can be difficult to leave off grading work that is intended to be used for practice. We grade everything that students do for a variety of reasons, such as to establish good work habits, to ensure that they do the work needed

for success, because the district requires so many grades posted in a time frame, to make sure we have enough scores to support a final grade, and so on. Yet figuring practice assignments into the final grade does not teach responsibility: Many students would rather take a lower grade than do the work. When we use grades as part of a punishment-and-reward system, we confound the meaning of the grade. What does a "C" mean? It could mean the student has partial mastery of a set of content standards or does not have even partial mastery but has excellent work habits (as evidenced by number of assignments turned in) or has complete mastery and poor work habits (as evidenced by number of missing assignments). Without a commitment to using only summative assessment information in the grade, our grades are meaningless as stand-alone communicators. When we embed such behaviors as effort and turning work in on time in our scores, the resulting grades are not accurate indicators of what the student has and has not achieved. And, as we have seen in Chapter 1, the effects of too much summative assessment, which can be translated to grading all assignments, are the opposite of the results we hope to achieve.

What can we put in place to develop good work habits and to ensure that students take practice seriously without using grades as punishments and rewards? How can we keep formative and summative records to satisfy the requirements and needs of parents and the district? How do we ensure that our grades are accurate? How much summative information is sufficient to support a decision about a grade? We address these issues in Chapter 4 (sampling—how much information is enough) and in Chapter 9 (how to address work habits, which kinds of assessment information to record, how to separate formative from summative information, and how to prepare a final grade). We invite you to skip ahead to those chapters if these concerns create barriers to engaging in formative assessment practices.

ASSESSMENT FOR LEARNING: DIAGNOSTIC ASSESSMENT

As we saw in Chapter 1, using assessment information diagnostically is one of the high-impact formative assessment practices. When we strive for a balance of formative and summative assessment in the classroom, we designate some of our assessments as *diagnostic*—their purpose is to provide information to keep learning moving forward. We give them before instruction as pre-assessments and during instruction as progress checks. Diagnostic assessments help us answer questions critical to good instruction (Chappuis, 2015, pp. 8–9):

- Who is and is not understanding the lesson?
- What adjustments should I make to instruction?
- What are each student's strengths? And needs?
- What misconceptions do I need to address?
- How should I group students for instruction?
- What differentiation do I need to prepare?
- Are students ready for feedback? If so, what feedback do they need?

It is important to remember that if we intend to use the information to determine who needs what, diagnostic assessments must be given in time to act on the information.

Informal Diagnostic Assessment Options

We can gather diagnostic information formally, with quizzes and practice tests, or informally by taking a "snapshot" of where students are with whole-class response systems. Examples of snapshot options include the following (Wiliam, 2018):

1. *Thumbs up/thumbs down*: Students indicate how confident they are in their mastery of a learning target by holding a thumb up for "I've got it," a thumb sideways for "I get it partially," or a thumb down for "I don't get it yet."
2. *Traffic lights*: Students indicate their level of confidence in mastery by showing a green, yellow, or red card. Teachers also use green, yellow, and red items such as a stack of three inverted plastic cups (*put the cup that shows your level of understand on the outside*) and stacking poker chips (*put the poker chip that shows your understanding on top*) for this activity.
3. *Fist of five*: Students hold up from one to five fingers to show their understanding, with one finger representing "This is new to me" or "I don't understand at all" and five fingers representing "I understand this completely."

The limitation of information from a snapshot activity is that it should be corroborated by observed evidence, as student self-reports are often imprecise. But you can use them for in-the-moment short-term instructional grouping if you check to make sure students are in the best group for their needs. See My Classroom Then and Now 2.1 for an example of how sixth-grade teacher Kristen Gillespie uses a snapshot activity to differentiate her instruction.

My Classroom Then and Now 2.1

Kristen Gillespie

I used to . . .

At the end of a class I would ask if there were any questions. I left it up to the individual to raise his or her hand to signal the level of understanding and ask questions.

Now I . . .

Each student is assigned a sticky note with his or her name on it. When prompted, students move their names to one of three boards. One board states that the child is on track and feels comfortable with the information from class. The second board signals to me that the child still has some questions and needs more practice.

The third board lets me know that the child needs individual attention to understand the material. Students are asked to move their sticky notes approximately 3–5 times per week.

Why I changed . . .

I noticed that it was simply easier and less embarrassing for the student to not raise his or her hand when asked if anyone needed clarification. I realized that each student had to take more responsibility for his or her own learning. Student self-evaluation is priceless, not only to the student but also the teacher. I wanted to create an environment where students practiced selfmonitoring and made deliberate decisions about their comprehension levels.

What I notice as a result . . .

The students look forward to moving their sticky notes. Those on the first board feel satisfied and proud of themselves. On the other hand, the students on the other two boards get the extra help they need, ultimately leading to a feeling of success. Over the course of the school year, students realize that placing their sticky notes in the accurate location has rewards. My students are able to selfassess and get additional help thereby avoiding a poor test grade.

Source: Used with permission from 6th-grade mathematics, reading, and English teacher Kristen Gillespie, Olmsted Falls City Schools, Olmsted Falls, OH.

One way to increase the level of diagnostic usefulness from these activities is to ask questions focused on the learning (Wiliam, 2018). For example, the above techniques could be used to ask students to determine whether a worked example is correct, to have them select the correct response from a list of possibilities, or to indicate how many errors an example includes. Many teachers use ABCD cards, giving the class a problem with answer choices marked *a.*, *b.*, *c.*, and *d*. Students individually use a set of ABCD cards to indicate which response is correct. Of course, if you have access to electronic voting systems such as classroom clickers, you could use them as well.

Another strategy for providing a window into students' understanding is to have them complete exit slips. These are short notes that students use as their "ticket out the door" at the end of the lesson (Chappuis, 2015). To be useful diagnostically, student responses should be directed at the intended learning. For example, you can ask students to respond to the questions "Why did we do _____ (the activity) today? What parts of the learning are you confident in? What parts do you still have questions about?" and then use the information to structure the next lesson's activities. In My Classroom Then and Now 2.2 and 2.3, fourth-grade teachers Jessica Barylski, Audrey Eckert, and Robyn Eidam explain the changes they have experienced since increasing their use of diagnostic assessment information.

My Classroom Then and Now 2.2

Jessica Barylski and Audrey Eckert

In language arts class, we used to focus mainly on summative assessment to gauge where our students were performing with the language arts curriculum. Now, we use assessment information formatively on a regular basis to help us identify students who need further instruction, whether it's intervention or extension of the standard. We gather information through activities such as exit tickets, dry erase board activities, practice comprehension cards, task cards, and games.

Our school has recently added S.T.A.R. (students taking advantage of resources) time to the schedule. Because of our formative assessment practices, we are now able to provide more targeted individual and small group instruction. We are also able to give students immediate feedback in order to help better prepare for the summative assessment. We have noticed that students are understanding the standards better and that fewer students need to retake assessments due to being able to act on feedback to improve their learning during S.T.A.R. time and also during regular class time. We feel that using formative assessment information during our S.T.A.R. time to give students immediate intervention and feedback allows us to be more proactive versus retroactive in the students' learning.

Source: Used with permission from Jessica Barylski and Audrey Eckert, fourth-grade teachers, Olmsted Falls Intermediate School, Olmsted Falls, OH.

My Classroom Then and Now 2.3

Robyn Eidam

I used to . . .

I used to teach all lessons and have one summative assessment at the end of the unit. I would use this one test to make a decision if students were competent on the subject taught. I did not check in with students enough during the lessons to ensure they had a clear understanding of the material. I would then base their grade solely on the unit test. Many students who struggled on the unit test would have benefited from multiple check-ins throughout the unit. These check-ins could have increased student achievement and allowed for a better understanding of material and standards.

Now I . . .

I now assess formatively many times throughout the unit. I am constantly checking in with students by using entrance and exit slips, student conferences, peer

interactions and observations, and strategic questioning. This information allows me to plan my next steps of instruction—I can push ahead if students are grasping concepts quickly or I can slow down and reteach if they are not. It also helps me to differentiate my students' learning. By differentiating, all students can work at a level that is perfect for them, which allows students to improve and grow at their own pace.

Source: Used with permission from Robyn Eidam, fourth-grade teacher, Olmsted Falls Intermediate School, Olmsted Falls, OH.

Instructional Traction

Whether we are using an informal option or a more formal option, such as quizzes and tests, to assess along the way, the information we gather should point to specific learning needs. Assessment instruments that do this are known as *instructionally tractionable* (Andrade, 2013). Not all assessments will work this way, even if they are labeled as formative. A score alone will not tell you anything beyond whether a particular topic needs further attention. An assessment with instructional traction tells you *what* the learning difficulty is.

INSTRUCTIONAL TRACTION WITH SELECTED RESPONSE ITEMS. Let's say you are teaching students to compare fractions. Students who are able to compare fractions accurately know the key to a fraction's size lies in the relationship between the numerator and denominator. When students don't know how to compare fractions accurately, typical mistakes they make include believing the size of the denominator determines the size of the fraction, or they may believe that it is the size of the numerator or the size of the two numbers overall. To understand how these mistakes can contribute to a selected response item's instructional traction, let's examine the following two items (Chappuis, 2015).

1. *Which fraction is largest?*
   a. 1/3
   b. 2/5
   c. 7/9

   In problem #1, which is the correct answer?

2. *Which fraction is largest?*
   a. 2/1
   b. 3/8
   c. 4/3

   In problem #2, which is the correct answer?

Which problem will give you better information about what students do and don't understand? In problem #1, the correct answer choice is *c*. If students are looking for the fraction with the largest denominator, which one will they choose? If they are looking for the largest numerator, which one will they choose? If they are looking for the largest numbers overall, which one will they choose? Problem #1 is a bad item because all three incorrect strategies lead to the correct answer. Not only does this item *not* tell you who has which problem, it doesn't differentiate between who understands how to judge magnitude in fractions and who doesn't. If you were to use such an item to group students for further instruction, you would have misplaced a number of students. The lesson here is that accuracy comes first; merely having a selection of wrong answers doesn't make it a good item. (Detailed information about writing good selected response items is included in Chapter 5.)

In problem #2, if students select the fraction with the largest denominator, which one will they choose? If they select the one with the largest numerator, which one will they choose? And if they select the one that shows they have reasoned about the relationship between the numerator and denominator to determine which fraction is largest, which one will they choose? This is an example of an item with instructional traction because the wrong answers ferret out misconceptions, which gives you good information about what each student's instructional needs are. As you will see in Chapter 5, you can use your own knowledge of typical mistakes and misconceptions to create assessment items with instructional traction in any content area.

INSTRUCTIONAL TRACTION WITH RUBRICS. A *rubric* is a scoring guide that describes a progression of levels of quality. Rubrics that provide good diagnostic information use specific terms to define the features of quality at each level for a given learning target. Consider the following rubric for *Display of Information*, one criteria in a rubric for science investigation (Chappuis, 2015).

Example A
4: Displays four pieces of information
3: Displays three pieces of information
2: Displays two pieces of information
1: Displays one piece of information

While this rubric will guarantee inter-rater reliability (all raters independently give the same piece of work the same score) and will offer guidance on what to help students do to attain the highest score (if you get a 2, you need to add two more pieces of information), it is not an accurate reflection of what it means to do well on the learning target. This is an example of *quantitative language* used in a rubric: it substitutes number counts for explanations of levels of quality. Unless the number of instances does determine level of quality, rubrics using quantitative language will inaccurately represent the learning target and will therefore lead to action that doesn't improve achievement.

Next, consider this version:

Example B
4: Excellent display of information
3: Good display of information
2: Fair display of information
1: Poor display of information

This rubric will have inter-rater reliability problems. Absent description of what "fair" looks like, even providing examples of quality at each level will not be sufficient to standardize judgments across raters. Nor will it give the teacher a good idea of what each student's specific instructional need is. This is an example of *evaluative language*: the language of the rubric simply repeats the judgment implied by the level.

Now, consider this version:

Example C
4: Display of information is accurate, complete, and organized so that it is easy to interpret.
3: Display of information is accurate, mostly complete, and mostly organized so that it is easy to interpret. It may have one or two problems with completeness and/or organization.
2: Display of information is partially accurate, is partially complete, and has organizational problems.
1: Display of information is inaccurate, incomplete, and difficult to follow.

This is an example of *descriptive language*, representing what the teacher has decided is most important for students to learn to do. When using a descriptive rubric diagnostically, you don't need to assign numbers—you can highlight phrases that describe what you see in a student's work. For example, the information may be accurate (highlight the phrase in level 4) but missing an important part (highlight the phrase in level 2) and disorganized (highlight the phrase in level 1). This highlighting lets you and the student know exactly what is working well and what needs attention, which is the intent of diagnostic assessment. See Chapter 7 for an in-depth explanation of how to select and create high-quality rubrics.

In summary, when our intended purpose for an assessment is diagnostic, make sure the assessment results don't just tell you "Do something." Make sure they answer the question "Do what?" A well-constructed diagnostic assessment will not require attending a workshop to interpret its results.

ASSESSMENT FOR LEARNING: EFFECTIVE FEEDBACK

Effective feedback can be defined as information provided to students that causes an improvement in learning as a result. If there is no improvement, we would say that the feedback was ineffective. Researchers and those interpreting their work have examined what causes

feedback to improve learning and consistently agree that that the mechanisms by which feedback works or doesn't work are complex and variable. In cautioning that labeling a practice as "formative" doesn't generate improved achievement, Lorrie Shepard cites as an example an analysis of more than 130 studies on feedback conducted by researchers Kluger and DeNisi (1996), who found that in approximately one-third of the studies, feedback worsened subsequent performance levels; in one-third of the studies, feedback had no measurable impact on subsequent performance levels; and only in one-third of the studies did feedback cause improvement consistently (Shepard, 2008, pp. 284–285). And many other studies support these findings: feedback isn't always or even usually effective.

This may at least in part mirror your own experience: feedback isn't effective if students don't act on the information, for there is little likelihood that they will learn from it without doing something with it. Other researchers have found that it is the degree of mindfulness triggered by the feedback that determines its power to improve learning (Bangert-Drowns, Kulik, Kulik, & Morgan, 1991, in Wiliam, 2018). *Mindfulness*, or thoughtfulness, refers to the response the student has to the feedback—to what extent does the student respond by reexamining the work, thinking deeply about it, and engaging in productive struggle to improve it?

No one formula to guide feedback practices can be extrapolated from the research to date, but there is convergence on several requirements that will maximize the chances that students will act on the feedback in productive ways. We present these requirements as four characteristics of effective feedback as shown in Figure 2.4.

Effective Feedback Directs Attention to the Intended Learning

The first and most important determiner of whether feedback will cause further learning is what it focuses on. Comments emphasizing learning goals have been repeatedly shown to lead to greater learning gains than comments emphasizing self-esteem (Ames, 1992; Butler, 1988; Hattie & Timperley, 2007; Sadler, 2011). Feedback that directions attention to the self—that moves students into an ego-state—is repeatedly shown to impede student motivation. And if you were wondering about how feedback can make subsequent learning worse, this is how—it causes students to give up, to stop trying (Butler, 1988).

FIGURE 2.4 Four Characteristics of Effective Feedback

Effective Feedback

1. Directs attention to the intended learning, pointing out strengths and offering specific information to guide improvement
2. Occurs during learning while there is still time to act on it
3. Addresses partial understanding
4. Limits corrective information to the amount of advice the student can act on in the given time

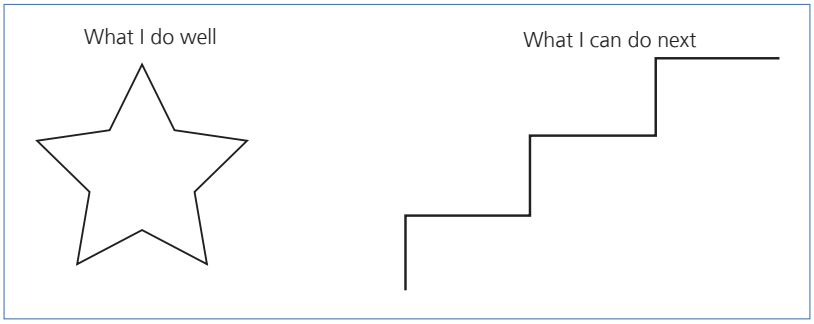
Source: Adapted from J. Chappuis, 2015. *Seven strategies of assessment* for *learning (2nd ed.)*, p. 95. Upper Saddle River, NJ: Pearson Education. Adapted by permission.

Descriptive feedback should reflect strengths and weaknesses with respect to the specific learning target(s) they are trying to hit in a given assignment. We often hear this called *positive* and *negative* feedback. We encourage you not to use these labels—they cause you to label further learning as negative. On the contrary, all feedback is positive: some of it shows students what is working well, and some of it shows students what to work on next. We suggest using the terms *success* and *next step* or *strength* and *intervention* to reflect a learning-focused stance in response to feedback. Feedback frames that illustrate this recommendation are shown in Figure 2.5.

Success feedback follows one of three basic formats in identifying what has been done right or well: identify what is correct, describe a feature of quality present in the

FIGURE 2.5 Feedback Frames

Stars and Stairs



That's Good! Now This:

Example 1

That's good!

Now this:

Example 2

MY TEACHER'S COMMENTS:

That's good!

Now this:

MY COMMENTS:

What I did:

Please give special attention to:

Source: Reprinted with permission from J. Chappuis, 2015. Seven strategies of assessment for learning (2nd ed.), pp. 115, 117. Upper Saddle River, NJ: Pearson Education.

work, or point out effective use of a strategy or protocol. For Example 2.1 gives examples of feedback in each of these formats. Effective next-step feedback has two parts: identifying the place where action is needed and offering guidance for next steps. There are three formats for identifying an action point: identify something that needs correcting, describe a feature of quality needing work, or point out a problem with a strategy or a protocol. There are also three options for suggesting action to take: offer a reminder, make a specific suggestion, or ask a question. For Example 2.2 gives examples of next-step feedback for each of these. (For information on conducting a feedback conference, see Chapter 11.)

For Example 2.1

Success Feedback Options

Identify what's been done right or well:

Option	Examples
Identify what is done correctly (feedback on learning targets with right and wrong answers)	• "All of your information about English settlements is correct." • "This shows you know when to use an apostrophe."
Describe a feature of quality present in the work (feedback on learning targets admitting of degrees of quality, such as those evaluated with a rubric)	• "Your introduction works well to set your topic up and pique the reader's interest." • "Your hypothesis is strong because it makes a prediction and supports it with cause-effect reasoning."
Point out effective use of a strategy or protocol (feedback on processes with protocols, such as math problem solving and writing)	• "The strategy you chose shows you understand the problem." • "The time you spent thinking during prewriting has led to a comprehensive outline of the topic."

For Example 2.2

Next-Step Feedback Options

Identify an action point:

Option	Examples
Identify something that needs correcting (feedback on learning targets with right and wrong answers)	• "Some of the information you gave is not true for all English settlements." • "You ran into difficulty with the differences between isosceles triangles and scalene triangles."

Describe a feature of quality needing work (feedback on learning targets admitting of degrees of quality, such as those evaluated with a rubric)	• "Your hypothesis is missing a reason explaining why you think that will happen." • "The support you offer for your argument is not strong enough yet."
Point out a problem with a strategy or protocol (feedback on processes with protocols, such as math problem solving and writing)	• "The drawing you made didn't represent all of the information in the problem." • "I think you have tried to get going on drafting without enough time spent on prewriting."

Prompt next steps:

Option	Examples
Offer a reminder	• "Remember what we have learned about converting mixed fractions before subtracting." • "Remember the flaws in the example we just evaluated."
Make a specific suggestion	• "You have to make your pencil marks so they line up exactly with the marks on the ruler, or your lines won't be parallel." • "Try putting your arguments into the graphic organizer and then look for holes."
Ask a question	• "What other kind of drawing might work?" • "Which other viewpoints might you consider?"

Source: Adapted with permission from Chappuis, J., 2015. *Seven Strategies of Assessment* for *Learning, 2e*, 96–101. Upper Saddle River, NJ: Pearson Education.

Effective Feedback Occurs During the Learning

In an often-cited study, Ruth Butler found that attaching comments to work along with a grade was useless in terms of generating further learning. Only when comments directing attention to the intended learning were given without a grade did they trigger further action that led to increased learning. There are two commonsense reasons to give feedback during the learning. First, when feedback is accompanied by a grade, the grade signifies "You're done." If students don't have the opportunity to act on the feedback, there is little likelihood they will gain from it. If you do intend to have them revise their work, there is no point in giving it a grade because they aren't done. Second, if we are not monitoring the quality of work while they are practicing and offering comments to guide their efforts, their practice is likely to lead to "learning it wrong."

Effective Feedback Addresses Partial Understanding

In their extensive review of feedback research, John Hattie and Helen Timperley say this: "Corrective feedback can be ignored by students if it is poorly presented or if the student's knowledge is insufficient to accommodate additional feedback information" (2007, p. 100). When students' work doesn't exhibit at least partial understanding, they will not be likely to have sufficient knowledge to act on it. This sets student up to fail twice: "I didn't know how to do this, and I don't understand what my teacher thinks I should do." It often leads us to "over-feedback," giving step-by-step guidance because the student doesn't know enough to take action. We are better off reteaching than wasting time on crafting these comments and setting students up to believe they are not capable, which is a risk of following a perceived failure with another perceived failure (Kantor, 2004). If we can't find some learning-target-related aspect to point out as a strength, it is a sign that the best intervention strategy is not feedback. This guideline is a time-saver, too. When they don't get it, don't give feedback.

Effective Feedback Limits Correctives to the Amount of Information the Student Can Act On in the Given Time

Remember that learners don't need to know everything that needs correcting all at once. Narrow your comments to the specific knowledge and skills emphasized in the current assignment and pay attention to how much feedback learners can act on at one time. Don't worry that students will be harmed if you don't point out all of their problems. Identify as many issues as students can successfully act on in the time given, independently, and then figure out what to teach next based on the other problems in their work. Failure to attend to this guideline will cause many students to give up rather than to pursue the steps needed to attain mastery.

Prerequisite to Effective Feedback

Because the language of effective feedback refers directly to learning goals, students need to understand what that learning is and have had some experience differentiating between levels of quality in order to understand what your feedback refers to. feed-back. As Royce Sadler explains, "A teacher may annotate a section with the comment 'This does not follow logically from what goes before.' A student who does not see any problem with the logic cannot take remedial action. On the other hand, to explain why the logic does not logically follow may require the equivalent of a paragraph or more of explanation, and the teacher cannot afford the time to compose it or is unaware that it could be necessary. Either way, the opportunity to learn from the incident lapses" (Sadler, 2011, p. 5). We explain how to ensure students have sufficient understanding of the learning prior to receiving feedback in the discussion of the Seven Strategies of Assessment for Learning that come later in this chapter.

ASSESSMENT FOR LEARNING: STUDENT SELF-ASSESSMENT AND GOAL SETTING

Self-assessment, monitoring comprehension and evaluating progress toward a goal, are *metacognitive* acts. We know from research that their impact on achievement can be quite strong. Furthermore, as researchers Brown, Roediger, and McDaniel point out, at the root of our effectiveness in any arena is our ability to grasp the world around us and to take the measure of our own performance. We're constantly making judgments about what we know and don't know and whether we're capable of handling a task or solving a problem. As we work at something, we keep an eye on ourselves, adjusting our thinking or actions as we progress (2014). Yet many students aren't able to accurately self-assess, so any judgments they make will not likely do them much good. Researchers Kruger and Dunning (1999) suggest that struggling learners lack the skills to improve because they are unable to distinguish between incompetence and competence. However, they can be taught to raise their competence by learning the skills to judge their own performance more accurately—in short, to make their metacognition more accurate.

There are several preconditions required before students can accurately judge the merits of their own work. First, they must come to hold a concept of quality roughly similar to that of the teacher's, and second, they must be able to compare their work to that standard (Sadler, 1989, p. 121). We accomplish this by making sure the learning targets that will be the referents for their judgments are clear to students, by giving them practice with evaluating examples of various levels of quality, by offering feedback that mirrors the kind of thinking they are to do when they self-assess, and by asking them to attempt a self-assessment prior to receiving feedback.

Self-assessment alone generally doesn't cause greater achievement. For it to work formatively, after identifying their own strengths and areas for improvement, students need to identify which steps to take to close the gap between where they are now and where they ultimately want to be. Effective self-assessment has four parts: a judgment of current status, justification for that judgment, a statement of the desired goal, and a plan for what to do next. Examples in the following chapters will illustrate all four parts.

ASSESSMENT *FOR* LEARNING: PUTTING THE PIECES TOGETHER

Effective formative assessment practices all lead to action on the part of the teacher *and the student* that improves learning. Many teachers offer feedback regularly, as suggested by the research. Many teachers have engaged students in self-assessment and goal setting. Many faculty routinely meet to discuss assessment results. These are good ideas that have been a part of effective teaching all along. Yet sometimes these practices improve achievement and sometimes they don't. Some students are more willing and able to take advantage of them than others. One contributing factor to success is how we set up the learning and assessment environment. Another is how we prepare students. Through careful reading of studies on formative assessment